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TRADE MARK REG.
1934
33

Favorable Action by Secretary Ickes Would Find Industry Ready to Push Ahead at Full Speed

By JAMES McINTYRE

THE quantity of "hot" oil produced in the East Texas Field has been variously estimated, but on Monday of this week it appeared to be the general opinion that it amounts to no more than 28,000 bbls. at this time.

It is estimated that in November an average of 36,000 bbls. of illegally produced oil went to refiners in the East Texas area. There were a few days in December when the illicit crude was estimated as high as 90,000 bbls.

Production in the United States which advanced very materially in the first half of the month, is expected to show a very pronounced decline in the last half, as many producers in prorated areas took the bulk of their allowable production in the first 15 days of the month and must compensate for it by curtailing in the remaining days.

The oil business is approaching the close of the year in a much improved condition over that of this time last year. Crude oil is being withdrawn from storage and the crude market everywhere appears to be firm. The industry, awaiting the action of Secretary Ickes on the proposed agreement under the code, is prepared to set sail for the safe harbor of Prosperity as soon as it is approved and there is a feeling of confidence that Secretary Ickes will approve the action of the signatories to the agreement. This confidence is felt in New York, in Washington and in Tulsa. The industry is ready to go any time it is given the word.

Two prospective pools in Bee County and an extension to the Government Wells Field were high lights in the weekly review of operations in southwest Texas. The Crescent Pool in Logan County, Oklahoma, appears to have been extended a half mile southerly, if a saturated core is a true indication. A failure in Jefferson Davis Parish, Louisiana Gulf Coast at 8,262 feet in depth upsets a geophysical prospect that was looked upon favorably. A new producing sand was uncovered in the Iowa Field in Iowa Parish, also in Coastal Louisiana, and the Greta Field in Refugio County, Texas Gulf Coast was extended northerly and southerly. Salt water in edge wells appears to have defined the limits of the Conroe Field in Montgomery County, Texas, with the possible exception of the south end.

The field of real features and surprises in recent weeks has been Central Michigan, and last week 15,000 bbls. per day of new potential production was added to the already big potential of that interesting oil region. One of the big wells of the week was in the Ogemaw County Field, which is 60 miles north of the Mount Pleasant area.

Crude Oil Production in the United States

Estimated daily average production for the week ending December 16, and a comparison with previous week and one year ago, follows:

	Dec. 16	Dec. 9	Dec. 17, 1932
Oklahoma—			
Oklahoma City	231,490	202,600	63,370
Seminole-St. Louis	110,195	90,020	110,515
Remainder of State	208,280	208,905	197,530
Total Oklahoma	549,965	501,525	371,415
East Texas—			
Lathrop	193,796	198,719	128,722
Kilgore	140,860	144,803	99,361
Joiner	125,669	129,618	106,395
Total East Texas	460,325	473,140	334,478
West Texas	121,115	120,847	162,609
North Central Texas	81,467	81,135	72,055
Texas Panhandle	42,712	43,767	47,823
East Central Texas	43,187	43,324	51,139
Gulf Coast—Texas	160,111	159,553	129,315
Southwest Texas	42,894	43,365	55,933
Total State of Texas	951,811	965,131	853,352
Kansas	106,990	109,025	90,820
North Louisiana	25,630	26,050	28,655
Gulf Coast—Louisiana	46,487	47,287	35,142
Arkansas	32,455	32,580	33,145
Eastern Fields	123,700	125,200	118,000
Rocky Mountain area	79,790	80,090	66,620
California—			
Santa Fe Springs	45,250	41,500	57,000
Long Beach	66,600	64,350	69,000
Playa Del Rey	10,000	9,400	13,250
Elwood	11,150	11,500	13,000
Kettleman Hills	52,000	53,500	59,750
Remainder of State	311,750	323,750	258,000
Total California	496,750	504,000	470,000
Total United States	2,413,578	2,390,888	2,067,149

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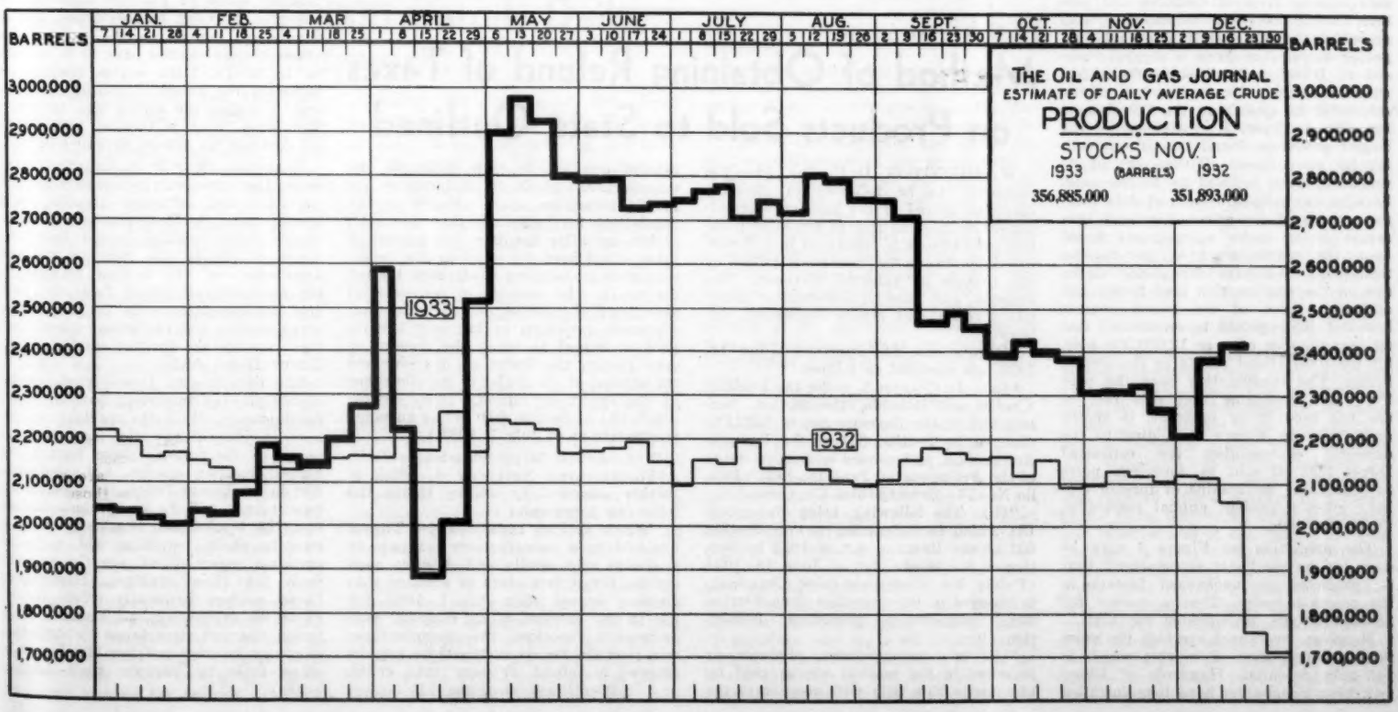


Refiners and Marketers Look to Diesel Engine as Means of Expanding Future Oil Market

By P. H. SCHWEITZER
Associate Professor of Engineering Research, Pennsylvania State College

The Diesel engine is known as the most efficient heat engine in existence. Thermal efficiencies of the most refined steam turbines are about 30 per cent, those of the most highly developed gasoline engines 35 per cent, while everyday Diesel engine efficiencies are around 40 per cent. The Diesel engine is also the most versatile of the prime movers. In the marine field it is used for main propulsion for vessels of every size from 20,000-ton liners to small fishing boats. The types of motorships vary from the 50,000-horsepower German "pocket" battleship to 10-knot tramp ships. On shore, the range of commercial application includes prime powers for central stations, factories, municipal waterworks, drainage, irrigation, mines, quarries, oil refineries, cement mills, railroad shops, hotels, office buildings, department stores, broadcasting stations, etc. In portable and semiportable uses, Diesel engines furnish power for shovels, drag lines, tractors, locomotives, rail cars, trucks, buses and airplanes. No other prime mover can demonstrate practical serviceability in all these fields.

The Diesel horsepower in use in the United States has doubled in the past seven years. This rate of increase is somewhat interrupted for the time being because of current economic conditions, but it will no doubt be resumed after the present depression definitely lifts. If this probable increase comes about, its effect on the oil industry will be important.

Diesel Horsepower in Use

There are at present about 4,000,000 Diesel horsepower in use in this country, practically all of heavy duty and medium duty type engines. The effect of automotive Diesel horsepower is quite negligible as yet in the total.

An attempt to arrive at the amount of fuel consumed by this 4,000,000 horsepower, which might be based upon data coming from oil refiners and jobbers, would be very inconclusive and probably misleading. Only a few oil companies attempt to keep a separate record of Diesel fuel oil sold. These few will admit that they are by no means successful in appraising the Diesel market with accuracy. Recently, one of the largest producers found that it was selling far more Diesel oil than any of its marketing men believed to be the case. Lacking any reliable source of data from the records of the sellers, the next best course is to make an estimate based upon the requirements of the engines themselves. We have dependable statistics on the consumption load factor and operating times of the Diesel engines installed. This points to an annual fuel oil consumption of over 12,000,000 bbls. for the total Diesel plants in the United States. The consumption over the past few years, assuming that this rate of use has been fairly constant, is shown graphically in Figure 1. Adding to the domestic consumption the estimated Diesel fuel oil sold in American ports to oceangoing motorships of foreign registry gives a present annual market of 14,500,000 bbls.

The prediction on Figure 1 may be described as the "base expectation," that is, predicted on unchanged factors in the power industry. Thus a market for 25,000,000 bbls. is indicated for 1942.

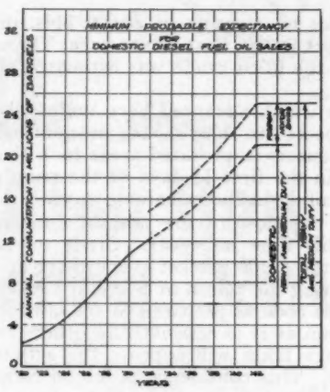
However, we cannot overlook the automotive Diesel fuel oil market which is yet only potential. Hundreds of Diesel switching locomotives have been installed even during the depression years and many engineers look forward to a complete dieselization of the railroads when the financial situation will permit it. The speed and economy of the Diesel rail cars impressed the railroad managements and found favor with the public.

Heavy Automobile Equipment

The most spectacular change, however, is taking place now in the automobile industry. We have unmistakable signs that the Diesel engine is becoming universally adapted for trucks, tractors and buses. The change is almost too rapid to follow. A few months ago the Bureau of Foreign and Domestic Commerce reported 5,000 Diesel commercial vehicles in use in France, 2,000 in England (of which 600 are buses), 1,750 in Germany, 1,200 in Italy and many more in other countries. A year ago the Diesel truck was a curiosity. Now at least six American truck makers build Diesel-engined trucks as part of their regular lines and every important automobile manufacturer is experimenting with Diesel engines.

Therefore it is hard to predict the future demand for Diesel fuel. If the present tendency continues the demand for Diesel fuel may some time exceed that for gasoline. When ships, locomotives, trucks, tractors, buses and airplanes are regularly driven by Diesel engines, the combined consumption of these will considerably exceed the gasoline consumption of passenger automobiles, even if the Diesel does not invade the pleasure car field.

An obstacle of the more rapid expansion of the Diesel has been the difficulty of getting suitable fuels. The big oil refiners neglected that apparently insignificant part of their business. The specifications for Diesel oils that various engine builders made up as recommendations as to the fuel to be used in their engines have been extravagant, unscientific, conflicting and chaotic. There was an entire lack of co-operation between the engine builders and oil companies and a confusion on the part of the users. The biggest drawback has been that no ready means were available to determine the suitability of an oil for Diesel operation.



Good Diesel Oil

In the last two years the picture is getting cleared up. As a result of some fundamental investigations made in the Royal Dutch-Shell and Anglo-Persian laboratories it was discovered that the suitability of a Diesel oil is largely determined by a previously known fuel characteristic, the "ignitability." Ignitability is not to be confused with flash-point or burning point, but rather indicates the ability of the oil to ignite readily with a shorter time lag when heated to a temperature that insures ignition.

According to present view, combustion knock in a Diesel engine is caused by the accumulation of fuel in the cylinder prior to ignition. Even under conditions that insure ignition, the fuel does not ignite instantaneously but only after a definite delay, which may be two, three or four-thousandths of a second. The longer this delay the more fuel accumulates in the engine which then burns practically simultaneously, accompanied by an audible knock. If the delay is extreme the engine will fail to operate with the fuel.

The oil that ignites promptly after it is injected will produce little combustion knock and will make the engine run smoothly. The kind of oil which hesitates long before igniting will cause rough running with severe knock. The fuel with short ignition lag also starts easier and burns cleaner, with less gumming and carbon deposits.

New Scale Devised

It is becoming recognized that "ignitability" is the most important fuel characteristic, as far as Diesel engines are concerned. It has attracted the attention of the major oil companies as well as of engineering societies. Research now in progress is destined to find the best ways to determine the ignitability of an oil and express it in comparable units. A scale like that of the knock rating of gasolines will probably be adopted and the ignitability of a Diesel oil be expressed in "heptane numbers" or "cetene numbers." A standard testing machine, a modification of the C. F. R. gasoline knock testing engine, will be adopted for testing Diesel fuels.

Curiously enough investigations have brought out the fact that practically every factor that aggravates knocking in a spark ignition engine tends to suppress it in a Diesel engine and what is antiknock in a gasoline engine is proknock in a Diesel. For instance, high compression ratio is regarded as the primary cause of gasoline engine knock while in a Diesel engine, knock can be cured by increasing the compression (though some engines have to go as high as 18 to 1). High engine temperature increases the knock in gasoline engines and it makes the Diesel run smoother. The same thing is true of high intake air pressure as caused by supercharging.

Regarding fuels it is significant that those that are best for Diesels are the paraffins and saturated straight chain hydrocarbons, while aromatics and naphthenes burn roughly, benzol being the worst of all. In the light of the new knowledge we are looking forward to the marketing of Diesel fuels that will give no complaint even in the highest speed engines and to "Diesel dopes" that will improve the ignition quality of ordinary Diesel fuels.

The paraffin-rich Pennsylvania crudes should play an important part in future developments. With the cracking process now in general use the most precious parts of the crude, those having the highest ignition quality, are eliminated. But in no distant future those petroleum constituents will be in greatest demand and the crudes and distillates rich in straight chain paraffins will command premium prices. They are the superior fuels for Diesel engines. High speed Diesel engines frequently refuse to run at all on naphthenic and aromatic California oils and straightrun Pennsylvania oils may be required for blending with other fuels to improve their ignition quality.

Method of Obtaining Refund of Taxes on Products Sold to State Outlined

WASHINGTON, D. C., Dec. 16.—The procedure to be followed in claiming credit or refund of tax paid on lubricating oil or gasoline sold to states or political subdivisions is contained in a Treasury Department decision made public by the Bureau of Internal Revenue. The decision, addressed to collectors of internal revenue and others concerned, follows:

"Regulations 44, approved June 18, 1932, are amended as follows:

"(a) In Chapter 8, under the heading, 'Credits and Refunds,' the caption, 'Section 621 of the Revenue Act of 1932,' is changed to 'Section 621 of the Revenue Act of 1932, as amended by Section 4 (c) of the Act approved June 16, 1933 (Public No. 73—Seventy-third Congress).'

"(b) The following, being Paragraph (3) added to Subsection (a) of Section 621 of the Revenue Act of 1932 by Section 4 (c) of the Act of June 16, 1933 (Public No. 73-Seventy-third Congress), is inserted in the quotation from Section 621, immediately preceding Subsection (b):

"(3) to a manufacturer, producer, or importer in the amount of tax paid by him under this title with respect to the sale of any article to a dealer, if the manufacturer, producer, or importer has in his possession such evidence as the regulations may prescribe that (A) such article has after the date this paragraph takes effect been delivered by the dealer to a state or political subdivision thereof for use in the exercise of an essential governmental function and (B) the manufacturer, producer, or importer has repaid or agreed to repay the amount of such tax to the dealer or has obtained the consent of the dealer to the allowance of the credit or refund. (Note—Paragraph (3) of Section 621 (a) as amended is effective as of July 1, 1933.)

"(c) Article 52, as amended by T. D. 4,357, approved November 4, 1932, is further amended by adding therto the following paragraph:

"Where articles taxable under Title 4 are sold by a manufacturer tax paid to a dealer who resells and delivers such articles direct to a state or political subdivision thereof after July 1, 1933, for use in the exercise of an essential governmental function, the manufacturer who paid the tax on such articles may be allowed a refund or may take credit

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Interest Centering on Working of Buying Pool; Many Difficulties Will Have to Be Met

By ANDREW M. ROWLEY

WASHINGTON, D. C., Dec. 19.—Definite progress is being shown on the part of the industry in shaping its operations to comply with the early approval of both the marketing and pooling agreements by Secretary Ickes.

The meeting of mid-west marketers in Chicago this week swelled the number of signers of the marketing agreement and the meeting of Mid-Continent marketers to be held in Dallas Wednesday is expected to yield additional signatures. It is the purpose of those in charge of these meetings to secure the names of companies marketing 85 per cent of the industry's products as outlined in the original draft of the agreement.

It has also become known here that payment of between 15 and 20 per cent of each company's obligation as part of the $10,000,000 agency fund will be requested at an early date. This leads to the assumption that actual buying by the agency will be started soon.

Details to Be Outlined

However, the details of the operation of the purchasing agency have not been worked out and much concern is being felt in regard to the persistent production of "hot oil" in the East Texas Field, which, if not stopped, would present a handicap in the successful operation of the buying agency. It is conceded that the ability of the agency to stabilize gasoline prices is contingent upon the strict enforcement of proration in the producing fields and upon the whole-hearted compliance by refiners in curtailing gasoline production and maintaining gasoline stocks to the prescribed levels.

Statistics compiled by the A.P.I. weekly show that gasoline stocks have declined over the past month and this has come during a time of year when stocks normally increase.

Committees are also at work in each of the various refining districts at this time, attempting to make equitable allocations for the first three months of 1934. As a result, each day the working out of the general plan of controlled gasoline production comes nearer to realization.

Agency Needs Support

The need for control in refinery operations may be easily seen if the buying agency is to operate successfully. Those who think this agency will serve as a dumping ground for all "excess" gasoline are to be fooled.

Plans must first be made to see that no excess gasoline is currently manufactured. This is still the major problem and suggests the true status of the entire program at this time.

This so-called excess gasoline that the agency is obligated to purchase is still an indefinite thing. Gasoline may be tightly held by the owner at one market level and then as the price goes up that owner becomes very anxious to sell. Thus, the plan of buying distress material tends to defeat itself at each progressive step. Also, after this gasoline is purchased there must be some means of distributing it among actual consumers.

It is not intended that the pooling arrangement do more than help carry the load of certain refiners and marketers who find need for money at this time which if not supplied would necessitate the early liquidation of their stocks. This would nullify the progress the industry has shown so far and would defeat all plans for carrying the work forward.

Therefore, controlled crude oil production, particularly in the East Texas area, controlled gasoline production at refineries, and a strict adherence to the plan of limiting gasoline stocks must be realized before full benefit may come from operation of the purchasing agency but it is being assumed here these will find favorable solution.

The plans for operation of the agency, while quite indefinite at this time, are being studied in conjunction with problems that develop in the marketing meetings and the meeting at Dallas Wednesday is expected to go a long way in suggesting a permanent program.

Dallas Meeting

This meeting, which has been called by C. A. Arnott, chairman of the oil marketing division of the Planning and Co-ordination Committee, will be in charge of Fred M. Lege, Jr., who is chairman of the Texas marketing committee.

Decision to call the meeting at Dallas was made at the conclusion of a two-day session in Chicago of marketers and refiners of the Middle West. At this meeting a Texas delegation was present consisting of Roy Jones, Panhandle Refining Co., Wichita Falls; Dave Gray, Waggoner Refining Co., Electra; O. E. Mitchell, Texas Pacific Coal & Oil Co., Fort Worth; M. Fownsworth, Texas Pacific Coal & Oil Co., Fort Worth; O. H. Carlisle, Gulf Refining Co., Houston; W. B. Rew, Magnolia Petroleum Co., Dallas; Frank Snyder, Simms Petroleum Co., Dallas, and Mr. Lege. All members of the delegation will attend the Dallas meeting to report on the discussion at Chicago.

Hot Oil Production in East Texas Now Estimated at 27,000 Barrels Daily

By L. E. BREDBERG

FORT WORTH, Tex., Dec. 19.—Estimates on the volume of crude oil produced in East Texas in violation of orders of the Railroad Commission, which in the earlier days of this month varied from 20,000 bbls. to 90,000 bbls. per day, have given place to a generally accepted figure of 27,000 bbls. per day as of Monday, December 18. Only a handful of producers and refiners are responsible for it.

Scouts have calculated that there were 1,094,000 bbls. of overproduced crude handled in the field during November, or a daily average of 36,466 bbls., all of which was considered as going to refineries in the field. One refinery with connections to only 500 bbls. daily allowable oil has been running around 3,000 bbls. per day. There are 13 plants in the field operating under injunctions and do not have to make reports. Some of the other plants may also omit reports, or be making false reports and running part of the "hot oil." Reclaiming plants in the field are reported to be running around 1,000 bbls. of "hot oil." These plants salvage oil from slush pits, tank bottoms and oil produced when a well is completed, some of the producers no doubt taking advantage of the recent Federal Court decision in a case involving such reclaiming plants, the plants gaining the decision.

Gasoline tax reports are now being used in tabulating the "hot oil" going to some of the refineries in the field, but even the staff of men working in the field for the comptroller's department are often eluded by truck drivers many of whom operate at night and make two trips from a plant, and often only one clearance ticket. This was explained by a truck driver who stated that if the investigators did not check up on his first night trip he used the same clearance slip for a second truck load of gasoline from the plant.

The Department of the Interior has added 25 more men to its force making investigations in the field and will be ready to fire a broadside into many producers and refiners when they are tried for evasion of orders. Such trials will probably not come up until a decision is handed down in the Amazon Refining Co. and others case which was tried before a three-judge Federal Court at Houston, on December 14. In the meantime a hearing will be held at Sherman, December 20, by Federal Judge Randolph Bryant on application of the Department of the Interior for a restraining order enjoining operators involved in the hearings before the three-judge court at Houston from overproducing their properties pending action on that suit.

More Signatures to Buying Agreements at Meeting of Refiners in Chicago

CHICAGO, Dec. 18.—Signatures of additional refiners were obtained for the marketing agreement at a meeting of representative refiners in the Middle West and the Mid-Continent, held at the Blackstone Hotel, Chicago, December 15. The meeting was presided over by C. E. Arnott of Socony-Vacuum Corp., chairman of the marketing subcommittee of the Planning and Co-ordination Committee, While no official attitude was recorded and no vote taken, and while numerous oil men attending reserved opinion, there was a disposition on the part of a substantial number to take a generally favorable view of the plan as a whole. Following the meeting members of the Planning and Co-ordination Committee stated they were encouraged by the reception accorded the agreement and believed it would meet with eventual acceptance.

Criticism of the plan appeared in most cases to center around various specific points. These, as brought up in the discussion at the meeting, appeared to be at least in part explained and ironed out to the satisfaction of the questioners.

Mr. Arnott stated he was greatly impressed by the interest indicated by the attendance and by the searching discussion and analysis which developed. After a session lasting several hours in which virtually every phase and angle was brought up, signatures were asked. The number signing comprised a substantial portion of the attendance, and some of those not signing gave as the reason that they lacked authority from their principals.

Waiting for Others

A point which brought out discussion was the active solicitation of jobber business now under way on the part of both major refiners and other refiners. Some refiners represented stated they were not inclined to sign until they saw to what extent their larger competitors were accepting the rules as a whole. Others asserted they preferred to study the whole plan and agreement further.

It was emphasized that the breaking point on size of margins between kinds of gasolines was made on octane rating instead of brands of gasoline. It was asserted also that if this agreement were generally ratified it would constitute the first time dealers for the country generally had been given a stated, guaranteed minimum margin, which might be revised upward. Despite the claim of some dealers that 4 cents is insufficient for them, and that it compared unfavorably with the margins existing a year or so ago, it was argued that excessive margins allowed in 1932 and early 1933 were insupportable by the industry and that 4 cents was a more liberal allowance than that of mid 1933 or the slightly better 3½-cent margin now being allowed.

The question of whether jobbers would be willing to accept the new agreement was brought up by some refiners attending. It was asserted some major company distributors were receiving 6 cents a gallon for some time past, before they advanced wages under the NRA. It was pointed out that under a 6-cent margin allowed by this agreement they were not in quite such favorable position as formerly. The matter of uniform contracts, as now being reviewed by the Planning and Co-ordination Committee, did not come up for consideration, it was said.

One reason the proposal is finding favor with some refiners is the provision that its termination hinges on action at any time by the oil administrator or the President. Another point meeting favor appeared to be that providing for representative control of operations spread out through various factions of the industry.

Markets Ask Hearing

While refiners in their invited meeting at the Blackstone Hotel were expressing an attitude that might be construed as being in general favorable to the plan, wholesale marketers were meeting in a session in which protest was the theme. The Wholesale Petroleum Marketers Association, as a result of the latter meeting, emerged with a message to Administrator Ickes, petitioning delay in approval and effectiveness of the plan. This association is a group of 40 car lot marketers of petroleum products of the central states (not including brokers) membership in which is made up of concerns purchasing products from sellers, taking title, selling and issuing its own invoices to its buyers. The territory involved ranges from Ohio west to the Rocky

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Average Octane Number of the Regular Grade Gasolines Increased Sharply in Past Year

By W. T. ZIEGENHAIN

This winter refiners are supplying better quality motor fuels than ever before. This is particularly true of the so-called "regular" or middle-priced grade. Such are the brief conclusions drawn from laboratory tests made on samples collected from company-operated filling stations in Cleveland, Chicago, Kansas City, Fort Worth and Tulsa, and may be taken as representative of motor fuel quality throughout the greater portion of the United States.

During 1933 there was a marked increase in the octane value of the regular grade, a further improvement in volatility in the regular and premium grades but not much change in the characteristics of the third grade.

One of the most impressive facts to be presented by the accompanying data is that gasolines of various companies are approaching a standard in each of the three price classifications, with sharper lines identifying the divisions. In other words, the premium grade in each case has a sufficiently higher octane value than the regular grade to cause the motorist to observe a perceptible difference in the operation due to changing load, speed or acceleration.

The regular grade will probably satisfy most of the ordinary motor fuel needs and as the result of the improvement in octane value and volatility this year, will prove to be a decidedly better general utility gasoline than could be claimed for the third grade. The latter remains relatively low in octane value, but its volatility good enough to give reasonably quick starting and acceleration where the motorist is willing to use the choke a little more often, is willing to throw more of a load on his battery and holds price the major consideration in most completely satisfying his own mind.

Survey Is Representative

Before criticism of these conclusions are presented on the basis that samples from comparatively few places were collected and tested, and also that only company-operated stations are represented, it should be pointed out that the marketing area under surveillance is served by many manufacturers and the gasoline comes from refineries located in a large number of states. Also, it has become common practice for refiners to establish standard specifications for the gasoline sold through their stations and supply that or a very similar material to their jobbers and independent station operator customers. Because independent jobbers and the station operators of the integrated companies are competitors, it becomes obvious that there can be no wide and prolonged difference in the quality of their respective products.

For these reasons principally, The Oil and Gas Journal decided upon a course of annual reporting of motor fuel testing that would permit a comparison year after year and would permit study of trends in a rather simple and yet complete form. The survey becomes of increasing importance since the semiannual surveys of the Bureau of Mines have been discontinued. More than a year has elapsed since the latest report was made.

Basis of Survey

Four years ago it was decided to choose 12 large Middle West refining companies selling their products through their own stations as a basis for future comparisons. That year, and each year since, one sample of each grade of gasoline was purchased about December 1 and all were sent to one laboratory for testing. All of the methods of test used in the laboratory follow those outlined by the A.S.T.M. and are recognized as standards for the industry.

Samples were collected from stations of the Standard Oil Co. of Ohio, Skelly Oil Co., Cities Service Oil Co., Barnsdall Refineries, Inc., Continental Oil Co., Mid-Continent Petroleum Corp., Phillips Petroleum Co., Sinclair Refining Co., Magnolia Petroleum Co., Gulf Refining Co., The Texas Co. and the Standard Oil Co. (Indiana). This, of course, does not represent anything like a complete list of important refining companies which operate stations throughout the territory, but the list is representative and because of the strong degree of competition existing among this list, there is little reason to believe the average of results is far from what a more elaborate survey would show.

Octane Number

On the opposite page is a detailed summary of the laboratory test results on each sample. These results have been averaged to arrive at what might be referred to as the typical motor fuel. This was done for each of the three past years so that the typical motor fuel of one year may be compared with that of the other years and a definite trend in quality revealed.

From the average of the octane values found on the three grades of gasoline it is easy to see that the general trend had been upward over the past four years. It should also be pointed out that the increase has been more in all cases than is actually shown here for the reason that for 1930 and 1931 the research method of testing was used and in the 1932 and 1933 surveys the more severe motor method was used. This factor penalizes the latter results by 2 or 3 octane numbers.

At present the regular grade of typical gasoline is shown to have an octane number of 69. One year ago it was 65 and the year before was 61. This improvement in octane value on the regular grade has made it quite distinctive from the third grade, which distinction was not so apparent two and three years ago.

It also shows the great influence the specifications of the Ethyl Gasoline Corp. has exerted. Just as the specifications for Ethyl Gasoline established a standard for all premium motor fuels, the company's specifications for the Q brand of regular gasoline is now followed. It is true, however, the company's specifications for the Q gasoline provides for a maximum octane value, whereas in the specifications for the Ethyl only the minimum is specified.

It is interesting to note, however, that whereas refiners have pushed the octane value of their regular grade within one point of the maximum allowed for fuel treated with Q fluid, they have held down the octane value of the premium fuel to the minimum allowed.

The octane value of the third grade gasoline remains at 53. This was the average shown a year ago and in the past four years there has been comparatively little change in this respect.

Volatility

Volatility in motor fuel remains an immeasurable thing, but prompts much attention and discussion. Here volatility is discussed simply as the rapidity with which the fuel will completely vaporize as heat is applied. No attempt has been made to calculate a volatility index for each. After viewing the distillation tests on each of the regular grades of samples it becomes evident that the general trend has been toward increased volatility.

After a comparison of the distillation points of the average regular grade and those of the average premium grade it will be seen that comparatively little difference exists. In one instance at least the distillation curves of the regular grade and the premium grade sold by a company are practically identical. It is also known that another company has practiced using the same base material for both the Ethyl Gasoline and the Q brand and the only difference in the two fuels was that of octane value.

Initial Point

Apparently refiners are generally agreed that for winter driving the initial point of the gasoline should be between 90 and 100° F. The average of the initial points of the fuels tested in this survey is 92 for this year and this is lower than in any of the three previous years. Last year the average was 94° F., the year before it was also 94° F. and in 1930 was 97° F.

The specifications more generally referred to as indicative of starting ability are the 20 per cent and the 50 per cent points.

The average 20 per cent point of fuels tested this year is shown as 163° F. and is 3 degrees lower than the average fuels tested a year ago and 10 degrees less than the average two years ago. The extent of the improved volatility of the 20 per cent point may be judged better when the average fuel of 1930 is studied. Then the 20 per cent point was at 182° F., just 20 degrees higher than at present and was higher than the average of the third grade gasoline samples tested this year.

About the same degree of greater volatility is shown for the 50 per cent point, this year's average being below those of the three previous years and is now about 20 degrees less than the average in 1930. It is interesting to note that the average 50 per cent point of the regular gasoline in 1930 was 12 degrees higher than the third grade today.

Ninety Per Cent Point

Some marketers place considerable importance upon the 90 per cent distillation point as a measure of power. At present the average 90 per cent point stands at 354° F. and this is 11 degrees less than the average a year ago. It is about 20 degrees less than the average for 1930. Thus, it may be seen that between the 20 per cent and the 90 per cent points, which includes the great bulk of the total gasoline fraction, there has been a lowering of the distillation curve of 20 degrees in three years.

This has been done principally by reducing the total yield of gasoline from a barrel of crude. This decrease in yield was not brought about for the purpose of increasing the average volatility of the fuel but was done in most cases to improve its octane value. The comparatively high market quotations for kerosene throughout a greater share of the past year has also been conducive to allowing a greater portion of the less volatile gasoline fractions to go into the kerosene.

Just what effect the use of Q brand Ethyl fluid will have upon this situation remains to be seen, but it is believed that it will have a strong tendency to reverse it.

The Ethyl Gasoline Corp. announced several weeks ago that it will discontinue the .2 cent royalty charge for each gallon of ethylized fuel manufactured after January 1. The price of the fluid will also be reduced and the result will

Trend in Quality of Winter Motor Fuels

Average of laboratory tests made on samples of gasoline purchased at scattered points in middle western states from company-operated stations, about December 1 of each year.

Regular Grade	1930	1931	1932	1933
Octane number	60	61	65	69
Initial point	97°F.	94°F.	94°F.	92°F.
10 per cent	148	143	139	135
20 per cent	182	173	166	163
50 per cent	265	256	247	242
90 per cent	373	377	365	354
Endpoint	411	404	406	403
Recovery, per cent	96.9	96.7	96.5	96.7
Reid vapor pressure, pounds	6.4	9.0	9.5	9.5

Premium Grade	1930	1931	1932	1933
Octane number	72	74	76	75
Initial point	94°F.	97°F.	96°F.	93°F.
10 per cent	141	146	142	136
20 per cent	170	171	177	163
50 per cent	246	243	237	235
90 per cent	361	352	350	344
Endpoint	403	393	399	394
Recovery, per cent	97.6	96.9	96.4	97.1
Reid vapor pressure, pounds	7.5	8.1	9.0	8.8

Third Grade	1931	1932	1933
Octane number	51	53	53
Initial point	102°F.	96°F.	94°F.
10 per cent	152	148	146
20 per cent	193	181	180
50 per cent	276	264	252
90 per cent	380	368	367
Endpoint	426	426	425
Recovery, per cent	97.3	97.3	97.5
Reid vapor pressure, pounds	6.5	7.6	8.4

be that refiners will be able to use more of it per gallon of gasoline treated without actually spending any more money. Until there is a need to further increase the octane rating of motor fuels in general, it is believed that this cheapening of the fluid will induce refiners to cut more deeply into the crude to produce more gasoline. Whereas it was generally profitable to reform gasoline up to a total plant production of 65 octane value before adding the ethyl fluid, the cheapening of the latter will reduce this several octane numbers. Thus, for the time being at least, reforming is given a setback.

Endpoint

The average endpoint of the regular grade of motor fuels at present is 403° F. It becomes evident from this fact alone that the U. S. Motor specifications for motor fuel have been practically forgotten in actual practice, so far as the regular grade is concerned.

Unless there is a sharp reversal of the trend, the old 437 endpoint specification will be as far out of line as the 131° F. initial specification was several years ago. Such a reversal is possible, however, because a 437 endpoint gasoline of sufficient front end volatility can be a very satisfactory fuel, especially since it will be possible to include a larger lead content without a greater cost.

Another factor that will tend to increase the endpoint of the average fuel will be the possibility of a strict control of crude production to the point where gasoline prices will be so strengthened as to make it good business to manufacture every drop of gasoline from the barrel of crude possible. Time alone can answer this question, but even considering the favorable developments that have taken place in Washington in getting the industry to formulate and follow a program of price stabilization, the odds are still against the man who believes there will be a real shortage of gasoline over the next two or three years.

Vapor Pressure

One of the most impressive results to be found in comparing the characteristics of each grade of typical gasoline year by year is the general increase in the vapor pressure.

The regular grade has the higher vapor pressure at present, it being 9.5 pounds. Because of the slightly higher degree of stabilization the premium grade shows an average of 8.8 pounds for this year.

The average of the third grade is shown as 8.4 pounds at present but this represents an increase of .8 pound since 1932 and nearly 2 pounds since 1931.

This increase in vapor pressure in the third grade together with the greater volatility of the front end of the distillation, suggests that refiners are using more natural gasoline in their third grade product than they did in past years. This has enabled them to offer a well balanced motor fuel from a volatility standpoint even though the best of the gasoline fraction was diverted into the premium and regular production.

Swabbing Gasoline

The "swapping" of gasolines among companies has become a general practice and this has probably been responsible for refiners molding operating condi-

(Continued on Page 31)

Tests on Three Grades of Gasoline Sold by Refiners Through Midwest Stations in Past Three Winters

COMPANY A

Regular Grade	1930	1931	1932	1933
Octane number	56	60	65	70
Initial	91	100	90	90
10 per cent	156	152	130	130
20 per cent	190	180	156	160
50 per cent	266	258	234	237
90 per cent	378	360	352	348
Endpoint	427	400	393	394
Recovery	97.0	97.0	96.0	96.0
V. P.	5.1	8.2	10.7	9.7
Color	21	20	amber	C
Premium Grade				
Octane number	72	75	77	77
Initial	88	98	90	92
10 per cent	132	150	136	136
20 per cent	164	178	169	162
50 per cent	258	248	260	236
90 per cent	385	350	360	342
Endpoint	410	394	394	394
Recovery	96.5	97.5	96.0	97.0
V. P.	10.0	7.8	10.4	8.9
Color	red	red	red	C
Third Grade				
Octane number	56	54	54	52
Initial	96	90	98	98
10 per cent	140	137	150	150
20 per cent	174	164	188	188
50 per cent	290	257	264	264
90 per cent	394	366	376	376
Endpoint	415	409	428	428
Recovery	97.0	98.0	97.5	97.5
V. P.	7.8	7.2	7.5	7.5
Color	blue	blue	30	30

COMPANY B

Regular Grade	1930	1931	1932	1933
Octane number	61	61	66	67
Initial	100	89	101	90
10 per cent	145	144	160	132
20 per cent	178	180	190	162
50 per cent	262	262	262	241
90 per cent	380	374	370	360
Endpoint	412	400	410	406
Recovery	96.0	95.0	98.0	96.0
V. P.	6.9	11.3	9.2	10.0
Color	24	30	25	C
Premium Grade				
Octane number	70	70	72	70
Initial	92	92	94	90
10 per cent	134	136	136	128
20 per cent	162	160	156	154
50 per cent	245	228	218	224
90 per cent	369	340	322	326
Endpoint	395	384	382	382
Recovery	95.0	96.0	97.0	97.0
V. P.	10.2	9.5	10.2	9.4
Color	..	..	..	C
Third Grade				
Octane number	54	54	54	52
Initial	94	104	92	
10 per cent	150	156	146	
20 per cent	190	185	175	
50 per cent	276	260	242	
90 per cent	378	385	345	
Endpoint	426	427	420	
Recovery	96.5	97.0	97.0	
V. P.	9.0	7.5	9.4	
Color	blue	blue	C	

COMPANY C

Regular Grade	1930	1931	1932	1933
Octane number	62	48	65	66
Initial	98	98	100	94
10 per cent	161	156	145	138
20 per cent	185	188	176	162
50 per cent	269	264	258	244
90 per cent	382	380	373	368
Endpoint	420	417	417	408
Recovery	96.5	97.5	96.0	97.5
V. P.	6.8	7.5	8.4	8.2
Color	30	30	14	C
Premium Grade				
Octane number	72	73	78	76
Initial	93	102	93	90
10 per cent	136	152	130	137
20 per cent	166	180	154	179
50 per cent	250	250	217	242
90 per cent	390	362	326	356
Endpoint	424	400	382	394
Recovery	96.0	97.5	96.0	97.0
V. P.	8.5	7.7	10.0	8.9
Color	red	red	red	C
Third Grade				
Octane number	49	49	51	
Initial	102	98	92	
10 per cent	140	145	140	
20 per cent	188	177	174	
50 per cent	263	274	256	
90 per cent	386	374	380	
Endpoint	421	420	424	
Recovery	97.5	97.0	97.0	
V. P.	7.3	7.3	10.0	
Color	blue	22	28	

COMPANY D

Regular Grade	1930	1931	1932	1933
Octane number	52	60	62	70
Initial	103	95	92	88
10 per cent	158	142	138	128
20 per cent	194	176	167	153
50 per cent	278	258	248	238
90 per cent	386	374	382	359
Endpoint	419	418	419	405
Recovery	97.5	97.0	96.0	96.0
V. P.	5.5	8.8	10.0	11.0
Color	24	22	27	C
Premium Grade				
Octane number	73	75	76	..
Initial	102	97	96	..
10 per cent	158	148	136	..
20 per cent	191	178	155	..
50 per cent	276	248	224	..
90 per cent	380	350	328	..
Endpoint	414	396	385	..
Recovery	98.0	97.0	96.5	..
V. P.	5.2	7.4	9.6	..
Color	red	red	red	..
Third Grade				
Octane number	46	50	52	
Initial	106	102	94	
10 per cent	168	166	144	
20 per cent	198	190	170	
50 per cent	274	280	252	
90 per cent	388	396	378	
Endpoint	429	426	432	
Recovery	98.0	97.0	98.0	
V. P.	5.7	6.6	8.0	
Color	blue	30	30	

COMPANY E

Regular Grade	1930	1931	1932	1933
Octane number	59	58	61	69
Initial	98	100	98	87
10 per cent	153	150	150	126
20 per cent	190	178	180	156
50 per cent	276	260	260	240
90 per cent	375	350	374	364
Endpoint	416	395	418	420
Recovery	97.0	97.5	97.0	96.0
V. P.	4.9	8.0	8.4	11.6
Color	19	26	26	C
Premium Grade				
Octane number	72	75	65	77
Initial	89	98	118	94
10 per cent	136	150	178	140
20 per cent	166	176	200	166
50 per cent	248	250	262	246
90 per cent	360	352	376	366
Endpoint	404	395	426	420
Recovery	96.5	97.5	98.0	97.5
V. P.	6.8	7.3	4.4	8.7
Color	red	red	red	C
Third Grade				
Octane number	50	52	54	
Initial	103	95	90	
10 per cent	158	150	136	
20 per cent	196	187	171	
50 per cent	286	270	257	
90 per cent	392	385	380	
Endpoint	434	430	428	
Recovery	97.0	97.0	96.5	
V. P.	5.7	7.2	10.0	
Color	blue	blue	30	

COMPANY F

Regular Grade	1930	1931	1932	1933
Octane number	64	60	64	70
Initial	95	84	90	92
10 per cent	132	116	122	123
20 per cent	154	132	142	140
50 per cent	234	206	219	210
90 per cent	376	371	386	362
Endpoint	422	420	418	412
Recovery	97.0	97.0	96.0	97.5
V. P.	8.6	12.0	10.7	10.6
Color	26	30	17	C
Premium Grade				
Octane number	72	71	78	78
Initial	94	94	92	92
10 per cent	130	128	122	124
20 per cent	152	146	140	142
50 per cent	230	225	209	210
90 per cent	365	368	374	335
Endpoint	408	414	423	388
Recovery	96.5	98.5	97.0	98.0
V. P.	9.6	8.5	10.5	9.5
Color	red	red	red	C
Third Grade				
Octane number	46	51	52	
Initial	104	90	89	
10 per cent	166	135	135	
20 per cent	204	170	173	
50 per cent	286	236	240	
90 per cent	389	387	356	
Endpoint	422	431	392	
Recovery	97.5	97.0	97.0	
V. P.	5.0	8.4	10.0	
Color	blue	blue	30	

COMPANY G

Regular Grade	1930	1931	1932	1933
Octane number	58	66	60	70
Initial	92	96	94	88
10 per cent	142	140	140	134
20 per cent	178	174	165	164
50 per cent	274	257	251	242
90 per cent	362	350	362	354
Endpoint	390	382	397	392
Recovery	96.5	97.0	98.0	97.0
V. P.	6.3	8.4	7.5	9.7
Color	21	21	30	C
Premium Grade				
Octane number	71	77	79	71
Initial	92	99	96	91
10 per cent	140	146	145	134
20 per cent	169	178	173	170
50 per cent	240	242	240	252
90 per cent	344	342	352	356
Endpoint	407	378	388	392
Recovery	96.5	96.0	95.5	92.0
V. P.	6.8	9.3	8.5	9.8
Color	red	red	red	C
Third Grade				
Octane number	51	56	53	
Initial	103	92	88	
10 per cent	164	139	134	
20 per cent	200	166	174	
50 per cent	268	254	269	
90 per cent	368	360	356	
Endpoint	402	399	392	
Recovery	96.0	98.5	97.0	
V. P.	6.4	7.4	10.0	
Color	green	28	30	

COMPANY H

Regular Grade	1930	1931	1932	1933
Octane number	56	65	66	68
Initial	99	95	95	94
10 per cent	160	144	132	146
20 per cent	194	176	160	174
50 per cent	262	253	245	252
90 per cent	366	365	353	356
Endpoint	412	402	394	394
Recovery	97.5	96.0	97.0	96.0
V. P.	5.8	8.2	8.4	7.3
Color	24	28	18	C
Premium Grade				
Octane number	72	75	78	76
Initial	85	86	98	92
10 per cent	134	151	150	137
20 per cent	168	172	182	170
50 per cent	256	246	244	246
90 per cent	378	371	360	356
Endpoint	399	404	406	390
Recovery	95.0	96.5	97.0	97.0
V. P.	9.1	7.0	7.7	8.4
Color	red	red	red	C
Third Grade				
Octane number	56	49	53	
Initial	97	96	95	
10 per cent	151	143	150	
20 per cent	189	179	180	
50 per cent	269	272	250	
90 per cent	384	371	377	
Endpoint	422	418	422	
Recovery	97.0	97.0	98.0	
V. P.	7.0	7.5	7.8	
Color	blue	19	..	

COMPANY I

Regular Grade	1930	1931	1932	1933
Octane number	63	64	66	70
Initial	98	90	90	100
10 per cent	152	140	132	150
20 per cent	185	173	162	180
50 per cent	260	256	238	252
90 per cent	355	370	350	350
Endpoint	392	405	398	412
Recovery	97.0	95.0	96.0	98.0
V. P.	6.8	11.0	10.2	7.5
Color	16	amber	amber	..
Premium Grade				
Octane number	70	76	76	73
Initial	101	101	98	98
10 per cent	148	152	151	149
20 per cent	171	182	180	176
50 per cent	226	256	251	244
90 per cent	321	362	360	350
Endpoint	377	394	399	394
Recovery	98.0	96.0	97.5	97.0
V. P.	5.9	7.0	7.4	7.2
Color	red	red	red	C
Third Grade				
Octane number	56	60	53	
Initial	116	94	196	
10 per cent	176	154	160	
20 per cent	205	186	190	
50 per cent	267	258	251	
90 per cent	347	361	352	
Endpoint	425	419	403	
Recovery	97.0	98.0	98.0	
V. P.	4.0	7.8	6.2	
Color	22	22	16	

COMPANY J

Regular Grade	1930	1931	1932	1933
Octane number	64	60	66	68
Initial	98	98	89	98
10 per cent	148	148	132	140
20 per cent	181	180	156	170
50 per cent	258	258	234	238
90 per cent	358	370	348	350
Endpoint	398	404	388	398
Recovery	97.0	97.0	96.0	97.5
V. P.	5.7	7.2	9.8	7.8
Color	23	29	27	C
Premium Grade				
Octane number	72	76	78	78
Initial	97	99	95	94
10 per cent	148	148	140	136
20 per cent	180	176	170	162
50 per cent	248	254	250	220
90 per cent	358	364	352	320
Endpoint	401	398	381	378
Recovery	97.0	97.0	96.0	97.0
V. P.	6.9	8.1	9.2	9.5
Color	red	red	red	C
Third Grade				
Octane number	52	55	46	
Initial	104	97	96	
10 per cent	164	154	162	
20 per cent	196	184	194	
50 per cent	270	262	272	
90 per cent	374	387	382	
Endpoint	414	434	418	
Recovery	98.0	96.0	98.0	
V. P.	6.4	7.6	7.3	
Color	green	21	30	

COMPANY K

Regular Grade	1930	1931	1932	1933
Octane number	58	58	66	68
Initial	94	90	87	88
10 per cent	136	134	137	126
20 per cent	168	168	174	153
50 per cent	278	260	259	226
90 per cent	380	365	367	332
Endpoint	418	397	396	387
Recovery	97.5	97.5	95.0	96.0
V. P.	6.7	9.1	10.4	10.8
Color	30	30	26	C
Premium Grade				
Octane number	73	74	76	76
Initial	103	94	88	94
10 per cent	151	137	136	136
20 per cent	176	163	162	161
50 per cent	228	232	240	238
90 per cent	322	326	345	349
Endpoint	390	375	389	389
Recovery	98.0	98.0	96.0	97.0
V. P.	5.5	7.6	10.0	8.2
Color	red	red	red	C
Third Grade				
Octane number	49	55	55	
Initial	96	96	88	
10 per cent	152	148	134	
20 per cent	178	190	176	
50 per cent	277	284	265	
90 per cent	382	384	370	
Endpoint	434	423	414	
Recovery	98.0	97.0	98.0	
V. P.	6.7	7.4	8.6	
Color	blue	27	27	

COMPANY L

Regular Grade	1930	1931	1932	1933
Octane number	62	67	68	68
Initial	95	95	98	100
10 per cent	148	145	148	150
20 per cent	180	175	177	179
50 per cent	266	254	251	250
90 per cent	380	374	362	346
Endpoint	407	410	426	404
Recovery	96.0	96.5	96.5	97.0
V. P.	7.2	8.8	9.7	9.2
Color	amber	amber	amber	C
Premium Grade				
Octane number	72	76	78	76
Initial	97	96	96	99
10 per cent	146	140	136	137
20 per cent	178	165	160	162
50 per cent	248	224	230	224
90 per cent	359	332	351	324
Endpoint	403	388	433	412
Recovery	98.0	96.5	94.0	97.0
V. P.	6.1	9.5	10.0	9.2
Color	red	red	red	C
Third Grade				
Octane number	48	54	51	
Initial	107	102	101	
10 per cent	174	160	160	
20 per cent	202	190	186	
50 per cent	255	260	247	
90 per cent	362	361	354	
Endpoint	434	440	421	
Recovery	98.0	97.5	97.5	
V. P.	6.6	6.2	8.0	
Color	green	green	30	

Standard-Vacuum Oil Co., Foreign Subsidiary, Organization Will Soon Be Completed

By C. O. WILLSON

NEW YORK, Dec. 18.—With the approval here by the stockholders of the Socony-Vacuum Corp. it is certain that the plans announced several weeks ago to merge the Far East properties of the corporation with those of the Standard Oil Co. (New Jersey) in the formation of a new foreign unit will be carried out. It is expected that all details in connection with the operation of the new company to be known as the Standard-Vacuum Oil Co. which will control properties valued at $150,000,000 will be completed shortly after the first of the year.

It became known here definitely that W. B. Walker, a vice president of the Socony-Vacuum Corp., would become president and the executive head of the Far East company. G. S. Walden, of the Standard of New Jersey, will be senior vice president. Additional vice presidents are E. F. Johnson of the Jersey Standard and P. W. Parker and H. Dundas of the Socony-Vacuum. All of these executives have been identified with the Far East operations of their respective companies and are widely known in foreign oil circles.

Effective January 1

The new company will have a capitalization of $10,000,000 which will be owned jointly and equally by the two companies. The actual merger becomes effective January 1 with a proviso in the action of the Socony-Vacuum stockholders, that the final details of consolidation must be completed by July 1. It was stated that of the 30,868,843 shares of capital stock of the Socony-Vacuum entitled to vote, 28,827,554 or 77 per cent favored the merger.

The book value of the properties to be turned over by the Socony-Vacuum totaled approximately $80,000,000 and the book value of the New Jersey properties not including value of oil in ground totaled $40,000,000. The Socony-Vacuum property contributions to the merger are larger marketing facilities. Both the Vacuum Oil Co. and the Standard Oil Co. of New York which now constitute the Socony-Vacuum were marketers of many years standing in the Far East previous to their merger. These properties are located in Japan, China, British India, Australia, New Zealand, Oceania, South and East Africa.

The Standard of New Jersey properties consist largely of producing and refining facilities, although the company also has some distributing units in the Far East. At present the oil properties in the Dutch East Indies are producing 25,000 bbls. of crude oil daily and throughput of refineries is approximately the same. It is known that under the merger the companies expect to expand all phases of their operations. The merger was brought about due to the fact that the New Jersey Standard did not have adequate consumer markets for its producing and refining properties and the Socony-Vacuum was at a disadvantage from a competitive standpoint because it did not have production and refineries adjacent to its marketing outlets. The merger will give the two companies a dominant position in the oil operations of the Far East.

Forerunner of More Mergers

Some of the trade here are predicting that the Far East merger is the forerunner of similar consolidations involving the foreign operations of the two companies in other parts of the world with the probability that other American companies having foreign properties will be included. It is claimed that the foreign expansion of several American companies in recent years and similar expansion on the part of foreign companies has brought a highly competitive condition in which several companies have found themselves at a disadvantage. The advantage of consolidations with the view of correlating producing, refining and marketing operations for the purpose of reducing costs has become apparent.

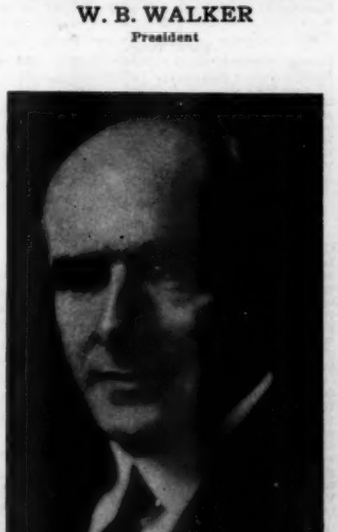
The organization of the Standard Franco-Americaine de Raffinage, consisting of the Standard Oil Co. (New Jersey), Atlantic Refining Co. and the Gulf Oil Corp., which has since built a large complete refinery in France with marketing outlets in that country is pointed to as an example of the trend toward consolidated rather than individual operations. The formation of the Iraq Petroleum Co. in which the ownership rests with American, British, French and Dutch-Shell companies is another case in point.

At the meeting of Socony-Vacuum stockholders a wire was received from R. W. Kellough, an attorney of Tulsa, asking that the merger be postponed for a period of 30 days. He suggested that during this postponement a committee of five be appointed to examine the terms of the agreement and make recommendations to the other stockholders. Mr. Kellough is the owner of 200 shares of common stock in the Socony-Vacuum. Only 3,546 shares were actually voted in opposition to the merger.

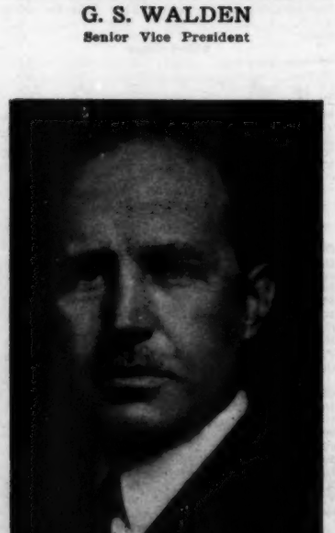
New Officers of the Standard-Vacuum Company

W. B. WALKER
President

G. S. WALDEN
Senior Vice President



H. DUNDAS
Vice President



P. W. PARKER
Vice President

Topical Groups Named for Division of A.P.I.

Personnel of the 1934 topical committees for four important activities of the Division of Production of the American Petroleum Institute have been announced by Charles F. Roeser, chairman of the general committee and vice president for production. The committees include allocation of production, Fred E. Wood, Standard Oil Co. (Indiana), Chicago, chairman; well spacing, T. V. Moore, Humble Oil & Refining Co., Houston, chairman; production nomenclature, Prof. John F. Dodge, University of Southern California, Los Angeles, chairman; and corrosion of pipe lines, C. R. Weidner, Sinclair Prairie Pipe Line Co., Independence, Kans., chairman; D. V. Stroop, American Petroleum Institute, secretary.

Under an agreement reached at the mid-year meeting at Tulsa last May, the topical committee on corrosion of pipe lines will report henceforth to the central committee on pipe line transportation. The members of the committees are:

Allocation of production: M. Albertson, Shell Petroleum Corp., Houston; R. E. Allen, oil umpire's office, Los Angeles; E. H. Griswold, Continental Oil Co., Fort Worth; H. H. Hardison, The California Co., Midland; J. T. Hayward, Barnsdall Oil Co., Tulsa; R. B. Kelly, Pure Oil Co., Fort Worth; R. S. Knappen, Gypsy Oil Co., Tulsa; D. R. Knowlton, Phillips Petroleum Co., Bartlesville; J. R. McWilliams, assistant oil umpire, Tulsa; T. V. Moore, Humble Oil & Refining Co., Houston; W. K. Whiteford, Barnsdall Oil Co., Tulsa; and H. D. Wilde, Jr., Humble Oil & Refining Co.

Well spacing: Stanley Gill, Houston; F. E. Heath, Sun Oil Co., Dallas; D. R. Knowlton, Phillips Petroleum Co., Bartlesville; G. V. D. Marx, Standard Oil Co. of California, San Francisco; K. B. Nowels, Forest Oil Corp., Bradford; C. E. Reistle, Jr., U. S. Bureau of Mines, Bartlesville; L. C. Uren, University of California, Berkeley; H. D. Wilde, Jr., Humble Oil & Refining Co., Houston; Fred E. Wood, Standard Oil Co. (Indiana), Chicago; R. D. Wyckoff, Gulf Oil Corp., Pittsburgh; J. J. Zorichak, Stanolind Oil & Gas Co., Tulsa.

Production nomenclature: Byron B. Boatright, Colorado School of Mines, Golden; H. H. Hardison, The California Co., Midland; John T. Hayward, Barnsdall Oil Co., Tulsa; T. V. Moore, Humble Oil & Refining Co., Houston; K. B. Nowels, Forest Oil Corp., Bradford; V. H. Wilhelm, The Texas Co. of California, Los Angeles.

Corrosion of pipe lines: J. C. Askam, Ohio Oil Co., Findlay; Charles Fitzgerald, Sinclair Prairie Pipe Line Co. of Texas, Fort Worth; Stanley Gill, Houston; W. G. Heltzel, Stanolind Pipe Line Co., Tulsa; R. W. Howe, Atlantic Pipe Line Co., Dallas; K. V. King, Standard Oil Co. of California, San Francisco; O. Q. Lomax, Humble Pipe Line Co., Houston; C. J. Nobbman, Shell Oil Co., San Francisco; R. W. Pack, Sun Pipe Line Co., Beaumont; J. H. Peper, Buckeye Pipe Line Co., New York; Walter F. Rogers, Gulf Production Co., Houston; H. B. Truett, Associated Oil Co., San Francisco; J. C. Walker, The Empire Cos., Bartlesville; F. E. Warterfield, Jr., Oklahoma Pipe Line Co., Tulsa; Blaine B. Wescott, Gulf Research & Development Corp., Pittsburgh.

Operators in Oklahoma City Field Now Engaged in Fitting Wells for Mechanical Production

By L. G. E. BIGNELL
Petroleum Engineering Editor

On July 1, 1933, it was reported that there were 445 lower Simpson, 455 Wilcox zone and 5 Fault line wells producing in the Oklahoma City Field. The report of December 1 shows that there has been a decrease of 10 wells in the lower Simpson zone and an increase of 30 wells in the Wilcox zone, a net increase of 20 wells producing oil and 10 wells producing gas. There were 905 active wells in the three zones under consideration on July 1 and 925 wells in the same zones producing oil in December. Arbuckle lime wells are not considered as they are no longer prorated.

The significant thing about this is that the condition has been brought about by the plugging of lower Simpson wells in the oil formation and shooting the casing in the upper part of the well to permit gas from upper formations to be secured. Much of this gas is converted into natural gasoline upon which there are no restrictions and for which a price as high as 5 cents per gallon has been paid quite recently. The present price is somewhat lower but some of the owners of natural gasoline plants in the Oklahoma City Field have use for the natural gasoline produced in their own refineries.

The completion of 30 new wells in the Wilcox zone since July 1 and the changing over from oil to gas in 10 lower Simpson wells in the same time indicate the trend of operations. The present drilling zone in the Wilcox sand is about drilled up in the north end of the field, but there are still some locations to be drilled in the west and southwest portion of this zone, in Sections 15 and 22.

In fixing potentials for wells in the Oklahoma City Field the proration umpire has been forced to take into consideration certain physical conditions existing in the wells that have in many instances prevented the taking of potential tests. The records for December allowable indicate that 89 wells, or 18.3 per cent of those in the Wilcox zone have not taken open flow potentials because of underground conditions. Also that 21.1 per cent, or 92 wells, in the lower Simpson zone have been assigned allowables without potential tests. There are also 85 wells in the lower Simpson zone that have tested in excess of 10 per cent salt water. This is 19.5 per cent of the total number of lower Simpson wells.

Eight wells in the field have been assigned temporary potentials while reconditioning. Adjusted potentials have been assigned to 16 wells in both zones known as minimum and water wells that have failed to produce their allowables. Wells with gas-oil ratios of more than 10,000 feet of gas per barrel of oil are permitted to transfer allowables on the same lease to other wells. There are 32 wells of this type in Wilcox and lower Simpson zones, or 3.48 per cent of the wells in the field.

This survey shows that out of 920 wells in the Wilcox and lower Simpson zones 322, or 35 per cent have been given special consideration in fixing their allowables for December. Salt water is moving into the Wilcox sand from the west edge, also some salt water has moved upward into the Wilcox zone through holes completed into the Simpson below Wilcox formations.

Reconditioning

There is considerable activity in the Oklahoma City Field at this time reconditioning wells in both Wilcox and lower Simpson zones. This takes the form of bailing with regular or special suction bailers, using special cleanout tools designed for this particular work and tried out for the first time in these wells, and by moving in cable tools to recondition the hole in the usual manner. It has been reported that some holes were filled up to a height of 2,000 feet above the bottom with fine sand settled out of the oil. Practically all wells not recently cleaned have considerable debris accumulated in them.

The material actually removed by cleanout methods has contained appreciable quantities of large pieces of shale and sandstone that has broken from the formations and fallen into the open hole. In some wells this material has formed bridges hard to break down by bailing. In one instance the bridge was removed by the use of a new cleanout tool that is actuated by compressed air and rotates a drill bit at high speed, thus penetrating the bridge in a few minutes and cleaning out over 200 feet of material below the bridge in about five hours' working time.

When the wells are cleaned tubing is run and most of them are placed upon the gas lift. It is reported that bottom hole pressure in different parts of the Wilcox sand varies from 600 to 900 pounds. Some operators believe that when the pressure decreases to about 350 pounds the gas lift will no longer be effective and serious consideration is now being given to other mechanical means of producing fluid from these wells when the gas lift period has passed.

Phillips Petroleum Co. and Indian Territory Illuminating Oil Co., the two largest operators in the field, with over 387 wells, have joined forces in attempting to solve their common problem of future production methods. A research engineering office has been established in the field and consideration is being given to every type of apparatus that might be used to lift the fluid.

There are seven wells pumping on the beam. Two wells are fitted with Reda electric pumps. One well is being produced by Hughes plunger lift. Other types of special pumping equipment has been tried with varying degrees of success, but the field is still open to manufacturers having lifting equipment that can be operated economically in wells approximately 6,500 feet deep, and will probably make up to 85 per cent salt water.

Salt Water Menace

Salt water has been produced from Oklahoma City wells drilled into each type of producing formation, Arbuckle lime, Simpson below Wilcox and Wilcox sand. Analyses of typical waters from each of these formations were published on page 22 of The Oil and Gas Journal of August 31, 1933. While there is considerable similarity in the water from each formation, the likeness is not enough to permit water chemists to state definitely that the waters are from a common source.

It is reported that 66 wells in the Wilcox zone are making salt water. These wells are along the west edge of the field and clearly indicate that edge water has entered this sand and is moving updip toward the east. Other wells that have penetrated both the Wilcox and Simpson below Wilcox formations and known as "combination wells," have had salt water move upward from the higher pressure lower Simpson zone into the lower pressure areas in the Wilcox sand. Most wells of this type have been cemented off up to the base of the Wilcox sand.

Many Wilcox sand wells have been cleaned and cemented. It is reported that the quantity of cement needed to fill the hole in the Wilcox sand has varied through a wide range. Some wells have had normal diameter hole in the Wilcox formation, but it has taken large quantities of cement to plug off the cavities in the lower portion of other Wilcox wells. It is a well known fact that as much as 20 per cent sand by volume has been produced from some of the Wilcox wells during periods of flow at high velocities.

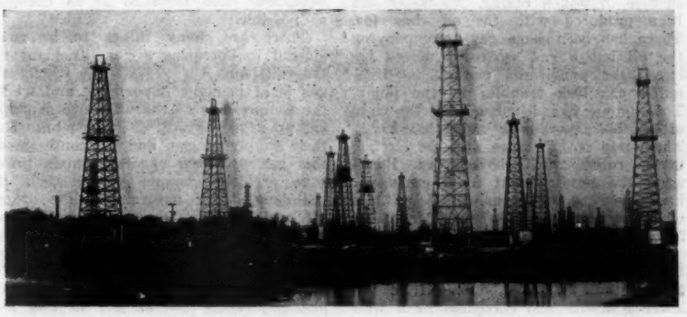
The success that will be attained by plugging off the bottom of the Wilcox formation with cement to shut off bottom water is still unknown. The same type of plugging was carried on in the lower Simpson wells with varying success. For a time it appeared that little was being accomplished by plugging for the water moved steadily through the Simpson formation and made its appearance in most wells in the north end of the field in time. Reports received since last summer seem to indicate that this water movement in the lower Simpson has about reached the point where equilibrium has been established and the quantity of water produced with the oil is about constant.

This approximate fixed rate of water-oil production from the lower Simpson may be due to the cement plugs holding back bottom water effectively, or it may be the result of production methods that tend to produce only the minimum amount of water with the oil from this formation.

It seems quite certain that salt water will continue to move through the Wilcox sand zone. This is a fairly soft, porous sand and in all other fields salt water has always moved in as the oil and gas were produced. The Wilcox sand zone in the Tonkawa Field is comparable with the Wilcox sand of Oklahoma City and the history of the Wilcox in Tonkawa shows that water entered and flooded that formation.

There are some Wilcox sand wells now capable of making 50 per cent salt water and one or two will probably make 85 per cent salt water. The producer does not want to handle appreciable quantities of salt water and the larger operators are therefore shutting in some of their water wells trying to find ways of repairing them and reducing the percentage of water to oil that they must produce.

The appearance of salt water in the Wilcox formation is a natural sequence of events. If it can be controlled it should flush the oil ahead of it into the wells and in this way increase ultimate production. If it should be uncontrollable in any part of the Wilcox sand the wells in that area may suffer. Production engineers have had considerable experience with Wilcox sand waters in Tonkawa, Garber, Seminole and other pools in this State and that experience will stand them in good stead in handling the situation in Oklahoma City.



Towering steel derricks and huge steel tanks are common sights in Oklahoma City Field

Natural Gas Production

Many of the wells in the Oklahoma City Pool have shown marked decreases in gas-oil production rate in recent months. Some of the wells producing from the Simpson below Wilcox have very little gas accompanying the fluid. Some Wilcox sand wells are reported to have very low gas-oil ratios. As the report quoted above indicates there are only 3.48 per cent or 32 wells in the field that have gas-oil ratios in excess of 10,000 feet per barrel.

In the report of H. B. Hill and E. L. Rawlins, engineers with the U. S. Bureau of Mines, on the "Estimated Gas Reserves of the Oklahoma City Field," published last June, they state that the total capacity of all natural gasoline plants in the field at that time was 636,000,000 feet per day. The estimated quantity of gasoline to be recovered from this gas was 363,000 gallons. The present quoted price for 26-70 natural gasoline is 3⅝ cents per gallon, or the income to the producers would be about $13,000 per day from this source. There are restrictions upon the amount of crude oil that may be produced from wells, but no limit to the amount of natural gasoline that may be made from gas that comes from the same wells. This explains why it has been more profitable to plug some oil wells in the Oklahoma City Pool and convert them into gas wells by piercing the casing opposite upper gas sands. Also why there are so many additional gasoline plants being put in operation in East Texas.

It is not to be inferred that unlimited

production of natural gasoline will continue indefinitely without a drop in quoted price. A short time ago this product was selling for 5 cents per gallon and a very active demand. With the greater amount available and the seasonal decrease in demand for motor fuel the market is not so strong now and the income to the producer from this source is therefore not so great. All gas in the Oklahoma City Field is being processed but it is understood that all plants are not working to full capacity because of lack of natural gas from the wells.

There has been doubt expressed about enough gas being available from the various formations in the Oklahoma City Field, considering both oil and gas producing sands as sources, to permit the balance of the oil in the Wilcox sand being produced by gas lift.

As formation pressures are lowered the quantity of gas required per barrel of oil will increase. S. F. Shaw, in his article published in The Oil and Gas Journal, August 31, 1933, estimates these volumes will increase from 430 feet per barrel at 800 pounds formation pressure to 2,000 feet when the sand pressure is only 300 pounds.

It is not assumed that all fluid will be lifted by gas lift at any time, in fact it has already been determined that it is not easy to control regulative proportions of oil and water produced by this method. In many wells it has been found that by increasing the volume of gas admitted into the annular space between tubing and casing greater quantities of fluid were produced, but water-oil ratios were increased. One of the major problems in the Oklahoma City Field is the disposal of salt water. It is reported that some small producers are now dumping water near the wells without regard to drainage in that area. With only a few operators doing this little attention is being paid to the practice, but if any of the larger producers attempted such procedure there would probably be suits filed in the courts for alleged damages.

Pumping Problems

As formation pressures have declined and rate of flow has decreased from wells in the lower Simpson or the Wilcox zones it has been quite general practice to introduce gas under pressure to assist in producing the oil or fluid. When the formation pressures were above 1,000 pounds and there was still a considerable volume of formation gas accompanying the oil this method served well and was economical.

As the formation pressures in the Wilcox sand are now reported below 900 pounds for a large portion of the zone and in some portions as low as 650 pounds the gas lift is not so satisfactory. Water adds to the difficulty for it requires as much or more gas to produce a barrel of water than is needed to produce oil or the mixture of oil and water. The desire of the operator is to produce as little water as possible but it is still an open question whether skimming can be resorted to successfully in this field.

As practically all gas produced in the field is delivered to natural gasoline plants and by those plants delivered into distributing systems leading to compressor plants for gas lift duty, or to individual wells throughout the field, the operators for the most part are dependent upon the gasoline plants for their supply of gas for plant operation.

It was reported last week that some well owners had been notified that gas could not be delivered to them, at least for the present. No explanation was made and it is hoped that the conditions are only temporary. If this source of gas is denied many small operators they will be placed in a bad position because they will not be able to operate their wells to secure their allowables.

To protect themselves against shortage of natural gas for production purposes many operators are giving serious consideration to other types of lifting equipment. One company has installed compressor units at several of its wells that will take gas from the lines at about 300 pounds pressure and compress it to about 650 or 700 pounds for delivery into the well. The compressors are powered with gas engines.

The compressor house and compressor at each well has been so located with relation to the well as to permit the engine end of the compressor unit being used for power to pump the well by rods and walking beam when gas lift ceases. Concrete piers are provided for outboard bearings to accommodate shaft for clutch and pulley to be added to the engine crankshaft beyond the flywheel. From this pulley the power will be transmitted by belt to a countershaft. This countershaft will be provided with reversing mechanism. The power will be transmitted from the countershaft to bandwheel mounted upon the usual type rig iron shaft provided with crank to impart motion to the walking beam, or to a pumping unit that will deliver power to the walking beam pitman.

This plan provides for gas lift as long as gas is available and that method is economical. Then the rig can be changed over quickly to a walking beam pumped outfit without in any way changing the present equipment, or shutting down the well.

Electric Pumps

The Phillips Petroleum Co. has installed a Reda submerged electric pump in its No. 3 Mosey well in Section 3-11-3, in the Wilcox zone. This well has a potential of 25,091 bbls. daily as determined by the decline method. The pump is located at 6,297 feet below the surface in 9-inch casing. No water has been produced with the oil thus far. There has been some gas accompanying the oil but a gas separator placed between the pump and motor has eliminated gas lock troubles in the pump. This pump has lifted oil at the rate of 25 bbls. per hour using 80 k.w.h. The pump is 125 stage and the electric motor rated at 75 horsepower. Based upon the power input at 3 cents per k.w. the cost of securing oil at this well has been about 3 cents per barrel for power.

A second Reda pump is installed in Phillips Petroleum Co.'s No. 1 Velt, in NE Section 2-11-3, producing from the lower Simpson and classified as a well making salt water in addition to a rated potential of 287 bbls. of oil daily.

On a test prior to installing the Reda pump this well made about 45 per cent water. The pump selected has 135 stages and is powered with a 75-horsepower electric motor. The pump is set at 6,100 feet below the surface. No gas accompanies the production. Reports upon performance is not available as the pump had not been operated last week.

Other Equipment

The Hughes plunger lift has been operated in one of the Sinclair Oil Co.'s wells in the south end of the field. Another lift is now operating in the north end of the field in the Wilcox zone and giving satisfactory results. At times it is necessary to make up the deficiency in formation gas with gas from the compressor plant, and this is done without trouble.

Many wells have small units compressing gas from an intake pressure of 10 or 15 pounds up to a discharge pressure of between 650 and 700 pounds. This seems to be the best working pressure for gas lift in the Wilcox zone wells at this time. Many of the wells have tubing fitted with kickoff collars. Others are flowed from the bottom with the pressures mentioned above.

Other plants compressing gas for gas lift work secure the intake gas from the system at about 300 pounds and increase the pressure to about 650 pounds in a single operation. Some of these compressor units have been mounted upon very substantial concrete foundations. Others have only temporary foundations, indicating that the owners are not certain as to the life of the gas lift plant, hence have used second-hand equipment and installed it as cheaply as possible.

There are many things to be considered in operating a gas lift plant in the Oklahoma City Field. The supply of gas is of primary importance and when the compressors at the wells are dependent upon the natural gasoline plants for their supply of gas, and frequently need this gas delivered at 300 pounds pressure problems become complicated. If the demand for natural gasoline drops off and the throughput of gas in the natural gasoline plant is decreased, a producer may find himself temporarily cut off from gas supply. Operators taking gas from lines at practically atmospheric pressure are subject to less inconvenience in this respect for there is still plenty of gas at the low pressure.

With all of these usual field variables it still seems quite apparent that gas lift will be applied further to wells as they cease to flow naturally. For a time this method will be satisfactory, but engineers who have operated gas lift plants for several years in this field realize that the term of life of this method of securing fluid is limited and it is anticipated that a great many wells in the Oklahoma City Field will be on other than gas lift or natural flow by next spring.

The manufacturer who can introduce into this field lifting equipment that will produce these wells, preferable with a minimum of salt water, has an attractive field for the sale of his equipment. Over 900 wells are now producing from Wilcox and lower Simpson and allowing for 50 per cent of the lower Simpson wells being plugged and produced as gassers from upper Pennsylvanian formations, there will still be over 700 wells to equip for mechanical lift. At a cost of $6,000 per well, a minimum estimated cost, this represents an outlay of $4,200,000.

The Sullivan Machinery Co. is now manufacturing a heavy duty pneumatic pumping head with 10-inch diameter of cylinder and 10-foot stroke. This head will handle fluid with a gravity of 1.03 from a total depth of 6,390 feet with an input of about 80 horsepower. As compressors are available at the wells to deliver gas to the cylinder at about 300 pounds, the working pressure needed for this duty, this equipment offers a suitable method of switching from gas lift to mechanical production without material change in equipment at well head.

This heavy duty pneumatic head is to be tried out immediately upon its delivery to the field by the Indian Territory Illuminating Oil Co. The test will be followed with much interest and if successful may be one answer to future pumping problems for the Oklahoma City Field.

Emulsions

There has been some emulsion made in producing by gas lift where formation gas, oil and water have been mixed and agitated in the flow string. While this condition has not been serious to date it must be considered in installing future equipment. Paraffin has been forming in the wells at the fluid level, also at depths in the casing or tubing corresponding to the level at which the expanding gas cools the oil so that the paraffin congeals.

It is probable that some operators will run screens in the bottom of their wells opposite the Wilcox sand. Packers will be used to shut off formations that are not productive of oil. Water will be shut off with cement and lead wool. Tubing is being run in all wells in the Wilcox zone and this work will continue until the job is finished.

At this time it seems as though the equipment best suited to the recovery of the oil from the Wilcox zone after the gas lift stage has been finished will function without need of any appreciable amount of formation gas, although compressed gas may be efficiently used as a source of energy to actuate moving parts in lifting equipment.

Ever since the Oklahoma City Field was opened the question has been asked, "How will the oil be recovered after natural flow ceased?" and it is still unanswered in many details. The question is now up to the equipment manufacturer.

Administrator's Report on Crude Stocks

The Department of the Interior has issued the following release:

"Stocks of domestic and foreign crude oil at the close of the week ended December 9 amounted to 342,847,000 bbls., a decrease of 687,000 bbls. over the total of 343,534,000 bbls. reported for the preceding week, Harold L. Ickes, Secretary of the Interior and administrator of the code of fair competition for the petroleum industry, announced today. This decrease represents a daily average of approximately 100,000 bbls., compared with a daily average addition of 253,000 bbls. during the preceding week. Stocks of domestic crude totaled 340,138,000 bbls., a decrease of 691,000 bbls. over the total of 340,829,000 bbls. reported last week, while stocks of foreign crude held in the United States amounted to 2,709,000 bbls., an increase of 4,000 bbls. over the total of 2,705,000 bbls. reported for the preceding week.

"Current import statistics recorded a decrease of 247,000 bbls. in receipts of foreign crude oil during the past week, as compared with the preceding week. Daily average crude runs to stills during the week ended December 9 were 2,190,000 bbls., a decrease of 55,000 bbls. from the daily average of the preceding week. Total stocks of motor fuel amounted to 53,360,000 bbls. at the end of the week, a decrease of 680,000 bbls. from stocks of the preceding week.

CRUDE PETROLEUM STOCKS REPORTED BY COMPANIES HOLDING 100,000 BBLS. OR MORE

Grade of crude oil—	Stocks held by reporting companies Dec. 2, 1933 (bbls.)	Stocks held by reporting companies Dec. 9, 1933 (bbls.)	Change from Dec. 2, 1933 (bbls.)
Pennsylvania Grade	5,308,000	5,307,000	—1,000
Other Appalachian, including Kentucky	1,123,000	1,131,000	+8,000
Lima, N.E. Indiana, Michigan	1,562,000	1,526,000	—36,000
Illinois, S.W. Indiana	11,174,000	11,170,000	—4,000
N. Louisiana and Arkansas	11,997,000	11,826,000	—171,000
West Texas and S.E. New Mexico	33,932,000	33,530,000	—402,000
East Texas	45,191,000	44,811,000	—380,000
Other Mid-Continent	152,422,000	152,662,000	+240,000
Gulf Coast	16,325,000	16,235,000	—90,000
Rocky Mountain	27,122,000	27,194,000	+62,000
California	35,613,000	35,696,000	+83,000
Total domestic crude	340,829,000	340,138,000	—691,000
Foreign crude	2,705,000	2,709,000	+4,000
Total crude	343,534,000	342,847,000	—687,000

TANK FARM VALUATION RAISED

CASPER, Wyo., Dec. 16.—The board of equalization of Wyoming has ordered the advance of the tax valuation of the Clayton tank farm of Stanolind Oil & Gas Co., a subsidiary of Standard Oil Co. (Indiana), to $8,896,698 from $3,775,064.

The State claims the tank farm has been undervalued for several years and that taxes are due on the larger valuation rather than the former, but the State does not expect to attempt to make the new order retroactive.

It is expected Stanolind will take the matter to the Circuit Court.

Houston Three Judge Court Will Not Decide Proration NRA Test Until After January 4

By NEIL WILLIAMS
Gulf Coast Bureau, The Oil and Gas Journal

HOUSTON, Tex., Dec. 18.—The case of the Amazon Petroleum Corp. of Delaware and a group of other operators which was heard before a three-judge Federal Court in Houston December 14-16 attacking the present program of production control in the East Texas Field brought up questions, decision on which no doubt will be of far-reaching concern to the petroleum industry in its efforts to obtain stability through the maintenance of proration. Both sides termed the suit as being the most important of any of the many court actions which have come up over proration.

An opinion in the case will not be handed down at least until some time after January 4, to which date attorneys have been granted time for the filing of briefs for the three judges, Circuit Judge J. C. Hutcheson and District Judges Randolph Bryant and T. M. Kennerly.

The scope of the suit extended from the Railroad Commission of Texas to the Federal Government, the oil code and the NRA program and named as defendants were members of the commission, Attorney General James V. Allred, and all state and Federal agents in charge of enforcing proration in the East Texas Field. It was alleged that proration orders of the Railroad Commission were based on allocations as issued by Harold L. Ickes, Secretary of the Interior, and if such were contrary to state statutes; that the National Industrial Recovery Act was unconstitutional and that as such the national petroleum code was invalid and certain regulations and acts promulgated under it were without authority.

The case was filed originally at Tyler, Tex., as a plea for an interlocutory injunction enjoining state and Federal agents from enforcing the present proration schedules against properties of the plaintiffs and Federal agents from prosecuting the so-called violators of the present production orders or certain rules and regulations set forth in the oil code. However, by agreement of attorneys for both sides, the case was submitted on its merits, making the hearing final as far as the three-judge Federal Court is concerned.

Most Important in Century

That this is the most important case tried in the United States in the last 100 years was the statement of Charles I. Francis, special assistant United States attorney general.

"If the Federal Government can't regulate the oil industry and if the code is invalid, what will happen to all the NRA codes?" he asked.

Louis Titus, counsel for the oil code Planning and Co-ordination Committee, also stated that the NRA is on trial and that the entire government recovery program will stand or fall according to the way this case finally is decided.

However, it was intended that the court might pass on the Federal angles at this time and that it would devote itself to the question of validity of the Railroad Commission orders in reference to the statutes of the state. In answer to a question by the court, Mr. Francis, the government prosecutor, stated that if the commission's order were invalid, Federal agents would not attempt to prosecute violators even though the court should not pass on the validity of the NRA.

The question of whether the Railroad Commission orders were being "dictated" by Mr. Ickes and the Federal Government in reality "bossing" the East Texas Field, instead of the proration of the field being based upon state statute was the subject of much argument. Plaintiffs charged that Mr. Ickes allocated the amount of oil Texas could produce and that the Railroad Commission merely reallocated it.

Attorneys for the commission denied this and explained the coincidence of the commission's orders conforming closely to the allocations of Mr. Ickes as being due to the fact that the Government's figures were taken as the most reliable evidence on the amount of market demand. The figures are received only as recommendations in assisting the commission to determine the actual market demand, the attorneys added. Under provisions of the state statutes, the commission can be governed by market demand in determining the allowables. The law requires that a public hearing be held with 10 days' notice before any change can be made in a proration order.

How Figures Are Obtained

During the course of the hearing affidavits were entered to show how the figures on which Mr. Ickes based his market demand allocations were obtained. The affidavits stated the figures were those of the Bureau of Mines, an impartial department of another branch of the Government, the Department of Commerce, entirely separate from the Department of the Interior. It was stated that the Bureau of Mines figures and estimates had always had a high degree of accuracy and were entirely representative of the actual market demand.

It was intimated by plaintiffs that state and Federal officers were engaged in a conspiracy to curtail the production of Texas as ordered by Mr. Ickes although claiming to be acting to regulate interstate commerce. That present orders, which follow in every instance those of Mr. Ickes, are arbitrary and a subterfuge was charged.

That angle of the case which concerned Federal Government participation in the control of production and enforcement of proration orders as against state sovereignty was looked upon as of vital significance not only to the petroleum industry but also to the country as a whole. In their arguments before the court, attorneys for the plaintiffs declared that the Federal Government had overstepped its bounds not only in attempting to take a hand in the production control as a means of regulation of interstate shipments of "hot" oil, but also in the promulgation and administration of the NRA program and oil code.

Plaintiff's Argument

It was claimed that in the first place there was no provision in the oil code for the restriction or proration of production such as is being attempted by the allocation of production allowables to the various states by Mr. Ickes. In the next place, it was alleged, the oil code itself was invalid and that of a consequence any regulatory measures or rules prescribed in it were without authority and unenforceable. To substantiate these claims, they argued that Congress had no authority under the Constitution to delegate any of its legislative powers to any other branch of the Government such as it did when it passed the NRA act.

The NRA act, it was explained, provided for the formation of the codes for the various industries under the direction of the President and the executive branch of the Government, and as the codes were sets of regulations and laws, binding, when approved by the President, upon the respective industries, the making of them constituted law-making powers. It was added that for the codes to be valid, Congress would have to pass the specific regulations and laws itself, leaving only the enforcement of them to the President.

The plaintiffs in the hearing took particular exception to regulations which had been made which required them to make sworn statements and reports to Federal agents concerning their various operations and shipments. They alleged this violated all principles of American government in requiring anyone to furnish evidence under oath which might be used against him. They also protested the practice of Federal agents, under the authority of the code, coming upon their property, inspecting their books and other searching for evidence of violation of proration orders of the state.

Defense Argument

Defense for the Federal regulation of oil production and the NRA code was given by Mr. Francis, the special assistant United States attorney general; Louis Titus of Washington, general counsel for the Planning and Co-ordination Committee, and Charles E. Fahy, first assistant solicitor of the Department of the Interior.

Mr. Francis introduced affidavits during the course of the hearing by which he sought to show that the petroleum industry was one of national scope and, hence, subject to Federal regulation; and that, being a national business, it was impossible to separate the conditions of one producing area from that of the country as a whole. Overproduction of

Secretary Ickes Says It Is Desirable That Prospecting for Oil Be Continued

WASHINGTON, D. C., Dec. 18.—Secretary Ickes has issued the following statement on drilling on public lands:

"To assist in gathering knowledge of possible future stores of oil and gas and to help create jobs for the unemployed, Secretary of the Interior Harold L. Ickes, the oil administrator, today reaffirmed the existing policy against the imposition of restrictions on drilling on public lands.

"Secretary Ickes added that this would in no way interfere with his program for conserving the nation's irreplaceable petroleum resources through production control, and that he felt it would aid in saving oil and gas by provisions for unitization and orderly development of fields discovered on acreage owned by the Government or where the mineral rights were held by the Government.

"The Secretary stated this policy in denying a petition of a drilling company for an order to prevent the company from conforming to a drilling contract on land in Big Horn County, Wyoming.

"A permit for drilling in that area was issued some years ago by the department. After an exploratory well had been drilled several hundred feet, the drilling company asked that it be prevented from continuing its work, but the holders of the permit wanted drilling to continue.

"They brought their respective cases before the Secretary, who referred it to the Departmental Oil Committee. This committee recommended that the petition for relief from the necessity of drilling be denied. The Secretary approved the recommendation today, with the following statement of the reasons therefor:

"'Under the conditions now imposed on all permits or extensions, waste of oil or gas will be effectually prevented and production thereof will be permitted only under an orderly plan of development determined to be in the public interest and approved by the Secretary of the Interior. Complete conservation of oil and gas resources is thereby effected.

"'Overproduction of oil is a recurrent phase of the petroleum industry. As in the past, it presumably will be succeeded by a period of relative scarcity and eventually all known oil and gas resources will be exhausted. It is therefore highly desirable that prospecting operations to discover additional sources of oil supply should be continued in an orderly manner and opportunity therefor should not be denied.

"'As an outcome of overproduction of oil there has been a slowing down in drilling operations and resultant unemployment of oil field workers. Prospecting operations and drilling in wildcat territory will tend to relieve such unemployment and will likewise result in the expenditure of considerable sums of money, thus tending toward national industrial recovery.

"'Section 7, Article 3, of the code of fair competition for the petroleum industry provides for control of the production of crude oil and for limitation thereof to balance consumers' demand for petroleum products. This control is nationwide. Producers from government lands should be required to conform their operations to the code and to quotas of production accorded them in conformity therewith. This done, further restriction in drilling or production would be in the nature of discrimination against operators on lands of the United States.

"'Section 7, Article 3, of the code provides also that wildcatting shall not be prohibited because the future maintenance of the petroleum supply depends on new discoveries and new pools, but declares that the development of such pools and production therefrom, except in accordance with a plan approved by the President, is unfair competition and in violation of this code.

"'It is believed that the principle enunciated in the code—no restriction on prospecting and drilling for discovery of a new field, but restriction on operation and production after discovery to conform to market demand under an agreed upon and approved plan of orderly development—is sound public policy.'"

oil in East Texas, he maintained, affected the markets of the country.

"One of the objects of the present code," he said, "was to prevent a race of the fields of a state to capture the national market. This practice is being prevented by the code. The right of control of this situation by the Government is to prevent an upset in the markets."

Messrs. Fahy's and Titus' arguments pertained largely to the right of the Federal Government to regulate production in its control of interstate commerce. It was stated that 85 per cent of the oil produced in Texas was shipped in interstate commerce and that as it was impossible for anyone to segregate that oil produced only for intrastate consumption and that for interstate shipment, the Government was justified in treating and assuming all oil produced in the East Texas Field as interstate commerce oil and thus subject to production control. He cited several court decisions in cases of other commodities in support of this. He also stated that the excess production of oil in East Texas might be in itself intrastate but that it was interstate in that it affected the petroleum industry throughout the nation.

Several other angles were injected into the hearing. The plaintiffs reiterated claims made in previous proration cases that the proration orders were confiscatory in that they had a legitimate market for more oil than they were permitted to produce and that they could produce a materially larger amount of crude without creating physical waste. They alleged the East Texas Field was being discriminated against.

That the code and the present proration schedules are not confiscatory but rather benefit the small operator was the contention of those representing the State and Government. They introduced affidavits, which, they said, showed a substantial profit was being made under the present program in contrast with conditions previously. They also tried to show that unless the proration program were maintained many additional stripper wells would be forced to operate at a loss or be abandoned and thus would create waste.

Maurice Cheek, special counsel, representing the Railroad Commission, presented arguments to show that all orders of the commission were working to the greatest prevention of physical waste. Others figuring in the case were Elbert Hooper, assistant attorney general of Texas, who argued there was no confusion between state and Federal agents in the issuance of proration orders; and F. W. Fischer, E. A. Camp and Walter Saye, counsel for the plaintiffs.

Sidelights of Hearing

In opening the hearing Circuit Judge J. C. Hutcheson, presiding, said it appeared to him that "about the only major question for us to decide is whether or not the Railroad Commission's order is valid. Of course, if Federal agents are interfering with operations affecting interstate commerce only, it might be necessary for us to do something to stop that."

He expressed doubt that a three-judge court has jurisdiction over the Federal questions involved. He said those possibly should be decided by a Federal district judge.

Judge Hutcheson asked Charles I. Francis, special Assistant United States Attorney General, if the contention was made that the National Industrial Recovery Act in any way superseded the law or abridged any part of the Constitution. Mr. Francis assured him that it did not, but, on the contrary, delegated to the President only such powers as Congress could lawfully delegate. The judges agreed that Congress has the power to prohibit interstate shipments of "hot oil," but questioned whether the recovery act sets out any standards sufficient for the enactment of the rules and regulations promulgated by the administrators of the oil code.

"Did you ever hear of a law like it?" Judge Hutcheson asked Mr. Francis, who replied that he did, naming the law establishing the Federal Trade Commission.

"I never did," Judge Hutcheson answered.

In regard to the "certificates" furnished by the oil administrator, on which the recent proration orders were based, Judge Hutcheson indicated he wanted to know whether the figures were based on unbiased facts or whether special interests or committees had anything to do with their preparation, or any influence on them. An affidavit from E. B. Swanson, chief economist for the petroleum economics division of the Bureau of Mines, was submitted, establishing the impartiality of the statistical department and the methods used.

Asks Why Texas Is Cut

Judge Hutcheson asked Mr. Francis why "Texas, capable of producing more oil than all the rest of the United States, was cut below the other states."

Mr. Francis explained that Federal oil authorities allocated the production to various states on the basis of the market demand for oil from those states. He said that experience showed the proportion of the world market demand that "Texas logically should supply."

The government attorney charged that "substantially all" of the plaintiffs were violators of the state proration orders.

"These people have been openly, notoriously and flagrantly violating every order of the Railroad Commission and will continue to do so as long as they can get by with it," he said.

Referring to an affidavit which dealt with the "only method of determining the reasonable market demand," Mr. Francis was asked by Judge Hutcheson:

"Who fixed the amount of the allowable?"

"The President of the United States."

"We know that he adopted it, but who fixed it?" the judge asked.

Mr. Francis explained that the fixed allowable resulted from a meeting of the oil operators from over the country.

"Does the affidavit explain how the allowable of about 400,000 bbls. happened to be the same amount recommended by the oil states advisory committee two years ago?" the judge demanded.

Mr. Francis said such was not explained.

"Did these complainants here have anything to do with the fixing of the allowable?" was another question. Mr. Francis said he did not know whether they did or not.

Mr. Francis recited from another affidavit, signed by Walter Behrens, an investigator for the Department of the Interior, which stated that there was a daily overproduction of 19,088 bbls. of oil in the East Texas Field.

"Let me see that affidavit," said Judge Hutcheson. "That man was a former prohibition agent here."

How Far Will Government Go?

Judge Hutcheson wanted to know how far the Government planned to go in alleging that activities affected interstate commerce. He pointed out that "this court" previously had held that the production of oil was not an interstate activity. Mr. Titus replied that production of excess of oil nevertheless affected interstate commerce.

While Mr. Fahy was discussing the government requirement that oil men file certain reports about whether the oil they handled was produced legally, Judge Hutcheson remarked that he did not believe the time had arrived that "the American citizen had to constitute himself as a sort of secret police."

"Even in the prohibition era, when things got pretty strong, you didn't go that far," he said.

At another time when Mr. Fahy was making additional arguments in an attempt to show that the plaintiffs were subject to Federal regulation, Judge Hutcheson remarked that "if the sovereignty of Texas is gone and we're no longer a sovereign state of the Union but a branch of the Department of Interior, you may be right."

Under questioning by Judge Randolph Bryant, Mr. Fahy said if the Texas oil production fixed by the State Railroad Commission conflicted with that allocated by Secretary Ickes he believed that Secretary Ickes' allocations would prevail.

Maurice Cheek of Fort Worth, special counsel for the Railroad Commission, said the order was in conformity with provisions of the Texas statute, empowering the Railroad Commission to restrict production to market demand and to prevent physical waste.

He explained that the Ickes recommendations merely were accepted as the best evidence of market demand. The figures were obtained by expert statisticians of the U. S. Bureau of Mines.

"Nevertheless, the Railroad Commission has made no independent effort to find out about market demand since these dictations from Washington started, has it?" Judge Randolph Bryant inquired.

Mr. Cheek replied that the commission asked for purchase norminations in September, but had discontinued that practice. "Your honor's statement is correct if you care to put it in that language," he said.

Better Times Seen by New Jersey Co.; Conditions That Must Be Met Stated

From The Lamp*

For the first time in some years, the petroleum industry approaches the close of a fiscal period with decidedly better prospects for the year to follow. There had to be a bottom somewhere in the long decline in earnings and it looks now as though this had been touched in the first half of 1933. Certainly the closing months furnish reasonable ground for hope that the trend will be upward in the future. Most, if not all, of the companies which make quarterly reports had heavy losses in the first three months of the year, and with but two or three exceptions, they repeated these deficits for the next period. In the third quarter they all showed marked improvement. In a few instances they still carried losses, but losses that were greatly reduced; in other instances, they made quite satisfactory profits. This is the more encouraging as the conditions that made for better earnings were in effect for only the latter half of the three months covered. The natural inference from that is that the fourth and final quarter will show the industry generally to be on a satisfactory basis of profit.

The improvement came, of course, with the reduction in the country's supply of fresh crude. Before Federal Government intervention there was a good deal more oil produced than was permitted under the allowables set by state authorities. This excess of illegally produced oil was cut off by the Secretary of the Interior. Afterwards new allowables were set by the same authority further to reduce the excess of daily production over demand. This quickly brought the situation into approximate balance and permitted producers to obtain a fair price, which had been impossible when there was crude pressing for sale.

In May, 1933, the price of a representative grade of crude was 29 cents a barrel. This rose to $1 a barrel with the curtailment in supply. As late as April, U. S. Motor gasoline sold at points of origin at less than 2 cents a gallon. By the end of November this was up to 4 cents.

Disparity in Price

It would have been too much to expect such radical readjustments to be effected evenly or permanently. Up to this writing, there has been a disparity between the price of crude and the price of gasoline made from it, the latter being too low if $1 is the right price for the crude. This is accounted for by the fact that current gasoline requirements were not met entirely out of current refinery runs. The industry had an excessive load of finished gasoline accumulated and much of this has come upon the market in competition with the newly manufactured product made out of $1 crude. This was effective in retarding a proportionate recovery in gasoline prices because it came upon the market in the period of seasonal decline in consumption. In the early summer months it could have been absorbed with less strain. The future course of prices, or at least their maintenance near present levels, depends upon the success of the Federal administrator in holding the daily allowables down to about the quantity required and on the extent to which holders of gasoline stocks are able to keep these off the market until the return of another period of high consumption.

Oil in storage, both crude and gasoline, is at such high levels that the customary slack season additions cannot be made without endangering current prices. While it is hardly reasonable to expect any reduction in stocks at this time, both production and refinery runs will have to be held down to prevent a further accumulation which would endanger the gains already achieved. By late spring the going should be easier, with the usual seasonal pickup in demand permitting absorption of a part of the excess stocks.

East Texas Threat

Any appreciable decline in the natural flow of East Texas is so far off that its potency as a threat to stabilization remains undiminished. For three years the great field has drowned out the most desperate efforts of other producers to bring the country's crude output within the limits of market requirements. So long as flush production has been available there at low cost, East Texas has succeeded either in wrecking the stabilization movement altogether or in so menacing it with the threat of imminent breakdown that confidence was undermined. Last May production in that prolific field reached a peak of 890,032 bbls. daily. Today it is around 417,000 bbls.

On October 1, 95 per cent of the 10,885 wells in East Texas were still producing under natural flow. At the present rate of production it is probable that as much as two or three years will elapse before the vast field is entirely on the pump, and until that time it will continue to be a potent factor in the producing situation. Even under pumping and gas lift the potential output of East Texas may well run over 1,000,000 bbls. daily, so that curtailment will be necessary there for an indefinite time.

So long as East Texas is in the picture in its present dimensions, it is clear that unnecessary wildcatting and consequent creation of new pressure on the market through the opening up of additional underground reserves will have to be held to a minimum. Meanwhile, both the industry and state and Federal enforcement officials will do doubt continue their efforts to maintain rigid control of output in the giant field.

Cheerful Aspects

Despite the disquieting effect of excessive stocks, the gasoline situation has a number of cheerful aspects.

Domestic consumption, which declined during four of the first nine months of 1933, picked up during the fall, so that for the entire year it should show a gain of about 1 per cent. Exports again fell off badly, due to the tariff which backed up crude in foreign countries to

(Continued on Page 37)

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Improved Hookup Method in Vent Lines Permits Accurate Gas Measurement With Pitot Tube

By C. M. RADER and R. A. FEEMSTER
Engineers with Phillips Petroleum Co.*

Because of the necessity of taking regular open flow tests in prorated high pressure oil fields, much gas is turned to atmosphere through vertical vent lines leading from the oil and gas separator. In the past, measurement of such gas has been accomplished by several methods, usually by use of the open flow Pitot tube. The use of the closed flow Pitot tube has apparently been avoided chiefly by reason of the fact that the ordinary vent line hookup makes it necessary to apply the instrument closer to a bend, valve, or obstruction in the pipe than is recommended by rules of good practice.

The many advantages that would result from the application of the closed flow Pitot tube prompted investigation of the actual effect upon quantity rate of flow measurements computed from data obtained with the tube in a normal working position which is closer to the tee at the base of the vent riser than is usually considered as giving highly accurate results. An effort was first made to compare the results then obtained to those under ideal conditions and at high velocities.

Research for Information

To make this comparison, knowledge of the characteristics of gas flowing at very high velocities is essential. Research for such information indicated that little or no work had been done that would give data necessary for such a comparison. Hence, the problem was changed to a test designed to determine the relationship between quantity rates of flow as measured by an orifice meter and a Pitot tube placed at the center of a pipe eight diameters from a tee or ell at the base of a vent riser, through which gas is flowing under low pressures at very high velocities.

To determine this relationship, a series of tests were run on a number of 8-inch iron pipe vent risers in which the Pitot tube data was taken at the position as stated above. Gas from a wet gas gathering system was passed through an orifice meter setting and thence to atmosphere by way of the vents.

Data were taken simultaneously from the orifice meter and Pitot tube from which computations for comparisons were made. The actual method of comparison is discussed later in this paper.

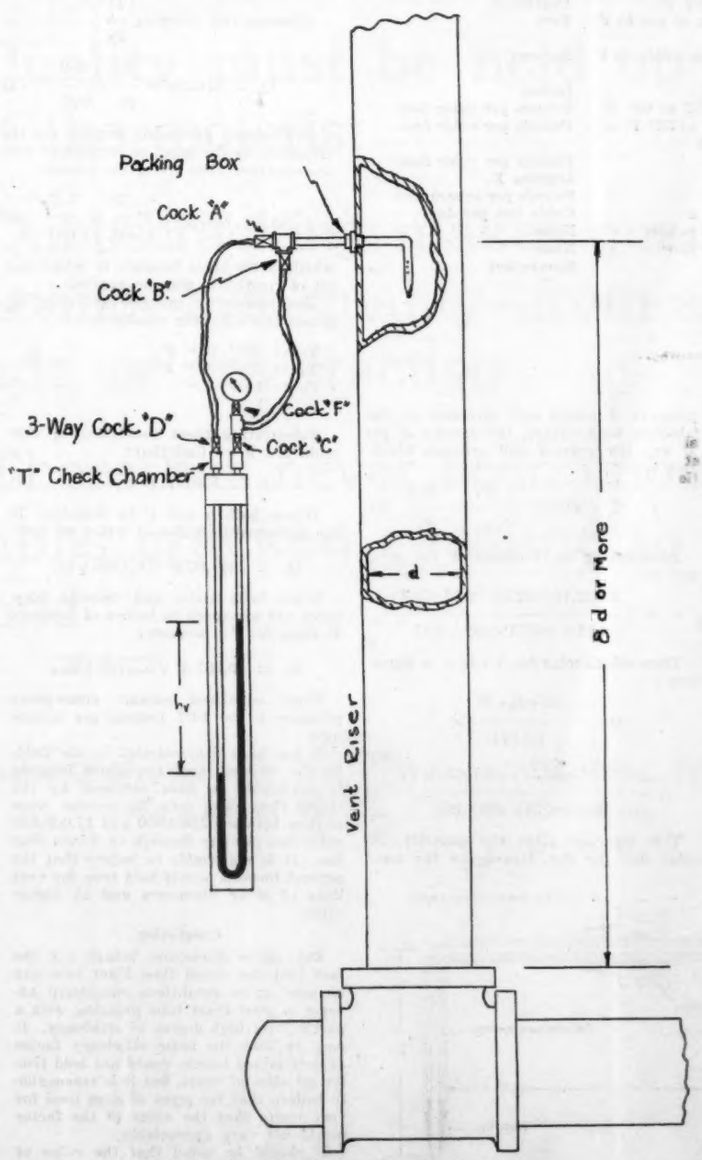
Since Pitot tube information is usually given in general terms, and not readily usable, it will be the purpose of this paper to discuss the application of the closed flow Pitot tube to the specific problem of measuring high velocity vent line gas. This will include information relative to the best type of instrument, method of computation of rates of flow from data obtained by the instrument and some of the theory upon which computations are based.

The Pitot tube used in the test was patterned after the one found to give the most accurate data by W. C. Rouse as brought out in his paper before the A.S.M.E. in 1913 (Figure No. 2). The unit consists of two concentric tubes, packed off at both ends, containing a 90° bend about 5 inches from the tip. The tip is beveled or "streamlined" so as to prevent interference with the energy, by the erection of cross currents, etc., when the tube is held in a stream of flowing gas. Midway between the tip and bend are four sets of small holes through the outer tube (two per set), drilled 90° apart on the circumference. By this arrangement, when the tube is held parallel to the stream of flowing gas, the total pressure (sum of the velocity pressure and static pressure) will be transmitted through the center tube and the static pressure alone will be transmitted by way of the small holes in the outer tube and the annular space between the two tubes. The difference of these two pressures is the velocity pressure and from the velocity pressure and static pressure the volume rate of flow can be computed.

In previous and other tests, similar to this but with the exception that low velocities were involved, the variation of quantity rate of flow was taken as a direct function of the velocity at the center of the pipe. On the assumption that this is the only factor that enters into the relative values of correct rate of flow and that measured by the Pitot tube placed at the center of the vent at such higher rates of flow as being considered herein, the ratio of the correct rate to the measured rate will be taken numerically equal to the ratio of the average velocity through the pipe to the center velocity. Since knowledge of the average velocity of flowing gas is necessary for quantity rate of flow computations and the Pitot tube measures only the velocity at the tip of the tube, the following three general methods have been employed in the past to arrive at the average velocity from the Pitot tube readings:

1. The pipe is traversed with the Pitot tube, taking readings for regular concentric areas. The average velocity head may then be taken as the square of the average of the square roots of these velocity heads.
2. A pressure reading is taken at a point, a fraction of the distance from the pipe wall to the pipe center, which is assumed to be the point of average velocity head.
3. The center velocity is measured and the average velocity is computed by the previously determined relationship of the two. For reasons brought out in the following discussion, it is fairly evident that this method is the most adaptable to the problem in question.

W. C. Rouse[1] found that gas flows through a pipe in a wave or spiral motion and at no time is the velocity distributed uniformly across the pipe, being greater in one quarter section than in the other three quarters at which time the velocity on any diameter is constantly changing. However, he also found that there is an approximate relationship between the mean velocity and that obtained by placing the tube at the center of the pipe and for 12-inch ordinary iron pipe results within 2 per cent may be expected by using $v=\sqrt{g\times.8h}$ in which v is the average velocity and h is the velocity head at the center of the pipe in feet of gas. By taking the .8 factor from beneath the radical the equation becomes $v=0.895\sqrt{2gh}$ and the 0.895 factor takes on the characteristics of the efficiency factor such as is ordinarily introduced into the orifice meter formula to make the correction from hypothetical to actual flow. In other words, Mr. Rouse found that under ideal conditions at relatively low rates of flow the ratio of the average velocity head to the center velocity head is approximately .8 or the ratio of the average velocity to the center velocity is approximately 0.895. It should be remembered that these are the results of tests on a 12-inch pipe under ideal conditions.



Improved vent line hookup

Other Work Done

Other work has been done relative to the ratios of average to center velocity. The National Physics Laboratory (1914) established a curve to show this value for given values of $\frac{dv_{max}}{u}$, in which d = pipe diameter, v_{max} = velocity at center and u is the absolute viscosity. This curve was carried up only through a range of low values of the modulus. An extension of this curve would undoubtedly yield much valuable information concerning the problem herein discussed.

Strictly speaking, this factor is not a constant but increases at higher velocities. The range of variation, however, is so small that the factor can be assumed constant without causing an error in excess of 2 per cent.

As was previously stated, lists were made to determine the effect of applying the Pitot tube close to a "T." Evidence of this effect was arrived at by measuring the rate of flow with an orifice meter and at the same time taking the static and velocity pressure with the Pitot tube placed at the pipe center.

As will be brought out later, the quantity rate of flow may be computed from a formula thus:

$$Q=CE\sqrt{h_v p}$$

in which C is a constant for a given set of conditions, Q is the quantity rate of flow, E the efficiency factor, h the velocity head and p the static pressure.

In the test Q was obtained from the orifice meter measurements; C was com-

*Before Dallas meeting, A.I.M.E.
Author's title, "A New Method for Measuring Vented Gas."

[1] W. C. Rouse, A.S.M.E. Trans., 1913, Vol. 35.

puted from known conditions of pipe diameter, density of gas, etc.; h_v and p were determined by the Pitot tube readings. Solving for E, the results, for a typical vent line, are as given in Table 1, Vent No. 1. Vent No. 2 is a good example of inaccuracies that may be met at low rates of flow.

Ordinarily data are obtained with a manometer containing a suitable liquid (usually water or mercury), to register the pressure heads. Due to the fluctuating column of fluid, caused by pulsation of pressure, etc., one-tenth inch could be easily made. This could cause a variation of the E factor as great as any found in Table 1.

From results similar to those in Table 1, it is evident that the approximate ratio of actual flow to theoretical flow remains practically constant at 0.895 over a wide range of velocities and absurd. Hence, this value will be applied in the following formula to correct the volumes arrived at by the previously stated conditions of measurement.

A formula for computing rates of flow from data given by a Pitot tube may be derived as follows in a manner almost identical to that for computing volumes from orifice meter data:

TABLE 1

Vent No. 1, 8.09" I.D. Metered vol. (cu.ft. per hr.)	Velocity head	Static head	E	Vent No. 2, 7.92" I.D. Metered vol. (cu.ft. per hr.)	Velocity head	Static head	E
	Inches Water				Inches Water		
76,800	.5	.9	.895	111,300	.60	.50	1.538
111,300	1.6	1.7	.895	157,500	2.4	2.3	1.07
176,400	3.4	3.2	.971	271,100	8.4	7.8	.98
223,000	6.0	5.3	.922	315,000	12.4	11.2	.885
282,000	10.0	8.3	.898	388,100	18.0	19.2	.916
313,000	12.2	10.2	.903	348,000	20.4	28.2	.95
332,000	14.0	11.7	.894		Inches of Mercury		
398,000	19.4	16.9	.899	466,000	2.0	2.1	.873
	Inches of Mercury			556,000	2.8	2.9	.838
460,000	2.0	2.2	.919	395,000	3.2	3.2	.887
535,000	2.5	3.0	.899	621,000	3.4	3.3	.899
571,000	2.7	3.6	.920	671,000	3.9	3.6	.902
616,000	3.2	4.2	.890				
669,000	3.6	4.8	.895				
710,000	4.2	5.6	.878				
742,000	4.3	6.0	.88				

Substituting for h_v:

$$v = \sqrt{2g\frac{hw}{12}} \qquad (4)$$

The density of a gas is equal to the product of the density of air and the specific gravity of the gas, each at the same temperature and pressure conditions. The density of air at 32° F. and 14.7 pounds per square inch is .08073 pounds per cubic foot. Since the density of a gas varies directly as the absolute pressure it exerts and inversely as the absolute temperature, the density of gas at any temperature and pressure condition is:

$$\rho = G \times .08073 \times \frac{P_f}{14.7} \times \frac{49.2}{T_f} \qquad (5)$$

Substituting in Formula 4 for ρ, g and w:

$$v = \sqrt{\frac{2\times32.16\times62.37\times14.7\times h_v T_f}{12\times.08073\times492\times P_f G}}$$

Then substituting for A and v in Equation 1:

$$Q_f = \frac{86{,}400\,\pi\,d^2}{4\times144} \times \sqrt{\frac{2\times32.16\times62.37\times14.7\times h_v\times T_f}{12\times.08073\times492\times PG}} \qquad (6)$$

This equation gives the quantity, in cubic feet per day, flowing at the temperature and pressure conditions of the flowing gas. To refer this to some temperature and pressure base, the following factors are introduced:

By a low of gases (combination of Charles and Boyles law):

$$\frac{P_f Q_f}{T_f} = \frac{P_b Q_b}{T_b}; \text{ hence } Q_b = \frac{P_f Q_f T_b}{T_f P_b}$$

Then replacing Q_f by the right hand member of Equation No. 6:

$$Q_b = \frac{86{,}400\,\pi\,d^2}{4\times144}\,\frac{P_f T_b}{T_f P_b} \times \sqrt{\frac{2\times32.16\times62.37\times14.7\,h_v\,T_f}{12\times.08073\times492\,P_f\,G}} \qquad (7)$$

Clearing and calceling $\frac{T_f}{P_f}$

$$Q_b = 5242.56\,d^2\,\frac{T_b}{P_b}\sqrt{\frac{h_v P}{T_f G}} \qquad (8)$$

For reasons previously brought out the efficiency factor must be introduced into the equation, thus giving the formula:

$$Q_b = 5242.56\,E\,d^2\,\frac{T_b}{P_b}\sqrt{\frac{h_v P_f}{T_f G}} \qquad (9)$$

which is the basic formula to which any set of conditions may be applied.

Gas measuring practice generally assumes the following conditions:

$T_b = 520°$ (60° F.)
$T_f = 520°$ (60° F.)
$P_b = 14.4$
$G = 1$

Substituting these conditions in Formula No. 9 we find that:

$$Q_b = 8301.06\,E\,d^2\sqrt{h_v P} \qquad (10)$$

Where both h and P in Equation 10 are measured in inches of water we find:

$$Q_b = 1411.66\,d^2\sqrt{h_w(408+h_s)}$$

When both static and velocity pressures are measured in inches of mercury E Equation 10 becomes:

$$Q_b = 19{,}361\,d^2\sqrt{h_{hg}(30+h_{shg}}$$

These equations assume atmosphere pressure to be 14.7 pounds per square inch.

It has been demonstrated in the field, by the writers, that the above formula is applicable to data obtained by the closed flow Pitot tube for volume rates of flow between 2,000,000 and 17,000,000 cubic feet per day through an 8-inch vent line. It is reasonable to believe that the general formula would hold true for vent lines of other diameters and at higher rates.

Conclusion

The above discussion brings out the fact that the closed flow Pitot tube can be used under conditions considered adverse to good Pitot tube practice, with a particularly high degree of efficiency. It may be that the same efficiency factor as determined herein would not hold true for all sizes of vents, but it is reasonable to believe that for pipes of sizes used for vent risers that the value of the factor would not vary appreciably.

It should be noted that the value of the E factor as determined by W. C. Rouse for velocities up to 100 feet per second arrived at under ideal flow conditions coincides with that obtained at very high velocities (800 feet per second and over) obtained close to a bend. It may be that at the high velocities the bend does not have as great an effect as at low velocities and the relationship as established by Mr. Rouse can be extrapolated to apply to higher velocities.

The increased demand for more knowledge concerning limits of application of the closed flow Pitot tube to vent line gas measurement should justify the further investigation into the subject.

The information most useful for the application of the Pitot tube as herein described would be in the form of data concerning the effect as reflected upon the efficiency factor by varying the velocity up to critical velocity through pipes of various diameters.

Until this is done, however, the relationship established herein can be used with the proven assurance that it yields more constantly accurate results than that provided for other types of Pitot tube.

EXPLANATION OF SYMBOLS USED

Symbol		Explanation—	Unit of measurement
v	=	Average velocity of flowing gas	Feet per second
g	=	Gravitational acceleration (taken as 32.16)	Feet per second per second
d	=	Diameter of pipe	Inches
P	=	Absolute pressure of gas	Pound per square inch
T_f	=	Absolute temperature of flowing gas	Degrees F.
h	=	Height of homogeneous column of gas at P and T_f producing v	Feet
h_v	=	Height of water column corresponding to h (velocity head)	Inches
h_s	=	Static pressure head	Inches
ρ_w	=	Density of water taken as 62.37 at 60° F.	Pounds per cubic foot
ρ_a	=	Density of air taken as .08073 at 32° F. at 14.7 pounds per square inch	Pounds per cubic foot
ρ	=	Density of flowing gas	Pounds per cubic foot
T_b	=	Absolute temperature base	Degrees F.
P_b	=	Absolute pressure base	Pounds per square inch
Q	=	Volume rate of flow	Cubic feet per day
G	=	Specific gravity of gas relative to air	None
E	=	Ratio of actual to hypothetical flow	None
A	=	Area of cross section of pipe	Square feet
		Subscripts: b = Base	
		f = Flowing	
		hg = Mercury	
		a = Air	
		s = Static pressure	
		w = Water	

Quantity rate of flow is determined by area times velocity rate of flow or

$$Q = 86{,}400\ av.$$ cubic feet per day. (1)

If a column of gas is enclosed in a vertical pipe and the bottom of the pipe be opened, the gas will flow from the pipe with a velocity according to the fundamental law:

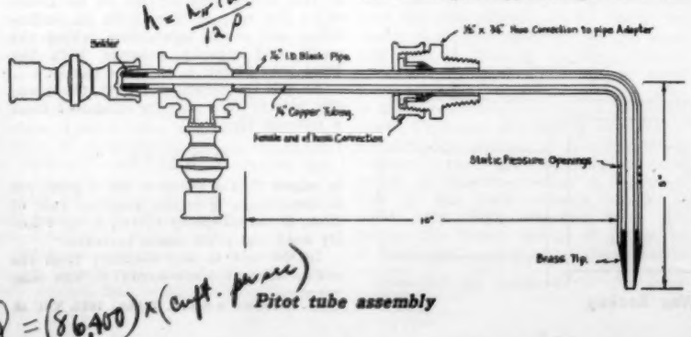
$$v = \sqrt{2gh} \qquad (2)$$

If this same column of gas is supported by the pressure due to the velocity of a moving body of gas, it can be assumed that the gas is moving with the velocity v where:

$$v = \sqrt{2gh}$$

Since it is inconvenient to actually measure a head of gas, its equivalent of a liquid may be substituted. If water is used, and measurements are in inches, the change may be made as follows:

$$h = \frac{h_v w}{12} \qquad (3)$$



Pitot tube assembly

Benjamin F. Harris Now President National Tube

NEW YORK, Dec. 18.—The United States Steel Corp. has announced that F. W. Waterman, president of the National Tube Co., a subsidiary, would retire on January 1, under its pension plan. He will be succeeded by Benjamin F. Harris, president of the Oil Well Supply Co., another subsidiary.

BENJAMIN F. HARRIS

Mr. Harris will continue, for the present at least, as head of Oil Well Supply under the corporation's new policy of grouping subsidiaries on regional lines rather than on the basis of products.

Mr. Harris was for years vice president and general manager of the Wilson-Snyder Manufacturing Co., with headquarters in Pittsburgh, Pa. When the Oil Well Supply Co. and the Wilson-Snyder Manufacturing Co. were merged he was chosen as president of the Oil Well Supply Co.

Mr. Harris was born in Pittsburgh in 1886. He had years of experience in engineering and as an executive before joining the Wilson-Snyder Manufacturing Co. as secretary, which position was followed by his advancement to vice president and general manager. He is widely known in the oil business as he has visited most of the important fields to keep in touch with the trade.

A.A.P.G. ANNUAL MEETING

March 22, 23 and 24, 1934, have been selected as the dates for the annual meeting of the American Association of Petroleum Geologists to be held at the Baker Hotel, Dallas, Tex.

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Refiners and Producers in Pennsylvania Are Warned Against Resting on Their Laurels

By R. C. CONINE

WARREN, Pa., Dec. 19.—Producers and refiners of the Pennsylvania Grade area must modernize their methods and equipment or go into discard, it was indicated by the three speakers featured on the program of the Middle District Oil Producers Association at their winter meeting here. The speakers were Thomas O. Grisell, executive secretary of the Pennsylvania Grade Crude Oil Association; MacLean Houston, production manager of United Refining Co. at Warren, and C. C. Hogg, highly successful engineer of gas and air repressuring methods of secondary recovery operations in Venango and Forest Counties. W. F. Clinger, district producer, presided.

Mr. Grisell's discussion centered on the progress that is being made in improving the qualities of western lubricating oils by means of selective solvent extraction, and the significance of this movement to Pennsylvania refiners and crude oil producers. The fate of the crude producer, it was emphasized by Mr. Grisell, is bound up with the advance or decline of the refiners of the oil. "Those producers who are selling their output to major companies," Mr. Grisell pointed out, "must remember that if it were not for Pennsylvania Grade refiners and the wide recognition they have won for their products, the major companies would have no need to buy the Pennsylvania oil as they have millions of barrels of other oils which do not cost them so much."

The executive of the Pennsylvania Grade Association enumerated a list of major refiners who are installing solvent extraction equipment for the purpose of matching the present Pennsylvania motor oils in viscosity index, and improving the western products in respect to other characteristics, such as sludging time. Although the cost of the smallest plant now available for similarly treating Pennsylvania lubricants to advance them as far ahead of the improved western oils as they now are of the usual western oils is approximately $250,000, according to Mr. Grisell, such plants will soon become an absolute necessity to save the Pennsylvania area from oblivion.

The work of the Pennsylvania Grade Association in furthering the interests of the producers and refiners was outlined, and it was pointed out that the association has established a patent department which has already filed three patent trees in Washington in connection with solvent extraction. It is from the experiments at Pennsylvania State College which led to the filing of the patent applications that the association's members have become convinced, Mr. Grisell said, that Pennsylvania lubricants can be produced which it now appears would be a practical impossibility to duplicate with other oils.

New Plan of Financing

Mr. Grisell spoke of an interesting development which appears to be under way and which would assure the producer of much more consistent operation. This is in connection with arrangements to finance and carry stocks of refined products, as for instance bright stocks, during off-season periods.

Mr. Houston explained to the producers how refinery costs reduced profits to a minimum and sometimes eliminated them entirely. The question had been asked if the refiners were not making most of the profit derived from Pennsylvania Grade oils. Solvent extraction, which Mr. Houston said must be adopted if the refiners were to continue to compete successfully with western oils, would further increase operating costs. The speaker traced the advance from batch stills to the modern bubble cap tray fractionating columns.

Pennsylvania gasoline, according to Mr. Houston, fell into disgrace from a place of honor with the arrival of demand for antiknock gasoline. Now, however, the Pennsylvania refiners are regaining the lost prestige of their motor fuel by installing cracking units and reforming apparatus. Topped crude oil and gas oil are cracked into higher octane gasoline, and the straightrun gasoline is reformed at temperatures ranging between 1,020° F. and 1,150° F. into octane specifications materials. "Q" fluid may be added to raise the octane number to 70.

Successful Repressuring

Mr. Hogg discussed the methods by which his company, the National Petroleum Co., has greatly increased production from the broken Venango and Forest County sands by means of gas and air repressuring. Figures presented by Mr. Hogg in connection with the results obtained were striking.

To conduct the repressuring operations successfully, however, Mr. Hogg said, the producer must be willing to invest money in coring as otherwise he can have no idea of the means of obtaining the desired results. The sands are broken and unless the producer knows exactly where to place his packers and where to direct pressure in the air-gas injection wells, it is almost a certainty that comparative failure will result. The producer's laboratory will tell him what he may expect from a certain sand. A pattern must be followed in locating the injection and oil producing wells if the propulsive force is to be utilized to the best advantage and if trapping of oil in inaccessible pockets is to be avoided.

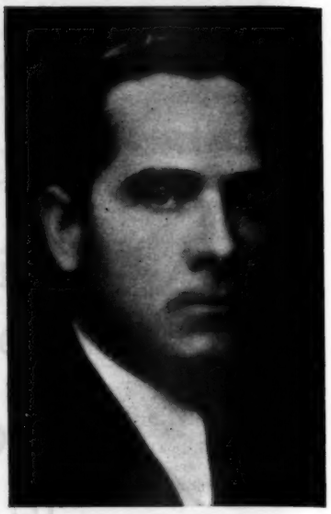
In operating, for instance, on a seven-spot pattern (in which six injection wells surround a production well) it may happen that most of the air and gas moves from three or four injection wells only a part of the way into the production well zone and thus does little or nothing toward producing oil. By knowing underground conditions and keeping check on injection wells by means of meters, it is possible to correct this situation by modifying back pressures in adjacent operations.

Mr. Hogg discussed new equipment developed by manufacturers which enable repressuring operators to obtain much better results.

Nearly a hundred producers attended the meeting. The next session is scheduled for some time in the spring, when Norman E. Maxwell, of Crew-Levick Co., will be principal speaker.

Hillman New Chairman of California Wildcats

Loren L. Hillman, president Hillman-Long, Inc., has been chosen chairman for 1934 of the Wildcat Committee of



LOREN L. HILLMAN

the California Oil and Gas Association, succeeding Torrey H. Webb, assistant to the vice president, Texas Co. The Wildcats are the livewire, pep group of the organization, devoting their energies largely to providing entertainment to the industry.

Their latest big job was the completion of arrangements for the annual banquet and Christmas Jinks of the association, Wednesday evening, December 20, in the Biltmore Hotel. As usual, the Wildcats devised an original play reviewing and satirizing the current oil situation, "The Last Round-Up," or "The Shooting of Gasoline Gus," acted by a cast of 11 prominent oil men and supplemented by a professional company of chorus girls, comedians, and trained seals. Wildcat J. R. Pemberton, oil umpire of the State, was chosen as toastmaster.

More Signatures to Buying Agreements

(Continued from Page 7)

Mountains, and from the Gulf to Canada. Headquarters is Chicago; president is R. M. McNeilly of Refiners Petroleum Co., Chicago; secretary is George Donovan of Industrial Petroleum Corp., Chicago.

Officials of the association say that under the probable operation of the pool and the oil administration's control of refinery operations, there would be no gasoline available to the open market. They assert that if a refiner had a considerable volume of gasoline to be sold on the open market during one or two months, his operations in succeeding months would be sufficiently curtailed so as to prevent his having such gasoline to sell the following month, under possibilities open to the plan.

The message to Administrator Ickes from the association read in part as follows:

"We, the members of the undersigned association, engaged in car lot marketing, consider the proposal for an oil pool arrangement as directly usurping the functions which we have always performed and do earnestly request the opportunity to present our objections in detail before adoption of the plan by the administration."

NORTH CAROLINA OBJECTION

WASHINGTON, D. C., Dec. 19.—Hearings on the proposed agreement to stabilize oil prices has been asked of Secretary Ickes, oil administrator, by Senator Robert R. Reynolds of North Carolina, at request of a group of so-called independents.

The North Carolina senator asserts the control plans would have the effect of establishing a monopoly of gasoline and other oil products while resulting in stabilization of price of crude to the producers. The chief fear, according to Senator Reynolds, in the absence of fixed maximum prices which consumers of the products may be charged, users of the products will be required to pay all the traffic will bear.

The request of Secretary Ickes for a hearing was joined in by the National Trackside Filling Stations, Inc., which opposes the agreement and declares its adoption will put an end to free competition.

Senator Borah Writes Ickes Opposing Oil Code

WASHINGTON, D. C., Dec. 18.—Reconsideration of the proposed agreement to govern the oil industry was requested of Secretary Ickes today by Senator Borah (R., Idaho).

"It is my understanding," Mr. Borah said in a letter to the oil administrator, "that the petroleum agreement is now before you and that you have not yet approved of the same.

"It is also my understanding that the board of Planning and Co-ordination has concluded its consideration of the matter. Hence, I am writing you direct.

"I hope, Mr. Secretary, that even your crowded hours will permit you to give personal consideration to this proposal. If I construe the instrument correctly, it ought to have further consideration."

Mr. Borah then quoted several paragraphs of the proposed agreement and interpreted them as follows:

"It would enable the major companies to control the petroleum industry.

"They would have the power unduer the proposal to fix the price of crude oil, gasoline or fuel oil.

"They could punish anyone not submitting to these prices by cutting off all supplies.

"It would be within their power to wipe out independent oil companies.

"I do not find, nor see, any reviewing power upon the part of any public official or impartial and disinterested tribunal."

CANADIAN GAS PRODUCTION

OTTAWA, Ontario, Dec. 16.—Canadian fields produced 1,655,910,000 feet of natural gas in October, compared with 1,153,714,000 feet in September and 1,652,982,000 feet in October, 1932. Production for the 10 months of 1933 totaled 18,070,426,000 feet, or 3.4 per cent below the 1932 output of 18,699,697,000 feet.

Blue Cuts Red Tape and Resigns Oil Code Job

OKLAHOMA CITY, Okla., Dec. 16.—Burdette Blue, vice president and general manager of the Indian Territory Illuminating Oil Co., tendered his resignation as chairman of region No. 4 of the production division under the Federal oil code. Wirt Franklin, chairman of the Planning and Co-ordination Committee, accepted it, and thanked Mr. Blue for his work in organizing the district.

Mr. Blue's only reason for quitting was that the production division is divided by states, with a chairman in each state. The state organizations have been completed and now are functioning. It was Mr. Blue's belief that matters could be expedited and work facilitated by having the state chairmen report direct to the general regional chairman.

"I have the highest praise for the personnel of the committees, for their officers and for the general chairman of the region," said Mr. Blue. "They are sincerely, conscientiously and efficiently discharging their duties under the code. It has been a pleasure to assist in the organization of the committees and to work with them even for a somewhat brief period.

"I am a firm believer in the code and its objectives and in the limiting of production to consumptive demand. I shall continue to render any service I can to the end that these objectives may be obtained."

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The Season's Greeting

The Oil and Gas Journal wishes you a Merry Christmas and a Happy New Year, confident that the betterment already experienced and the improved outlook for 1934 justifies every hope of realization.

Who Is the Oil Industry?

Who is the oil industry? Who is best entitled to say what is best for any industry? It is those who produce the raw material and those who manufacture the finished product.

If they cannot earn enough to keep going distributors and consumers will have to pay more for a diminishing supply until scarcity restores profit to the producers and manufacturers.

But in most lines of business, including gasoline, many distributors and consumers never think that far. They see only the immediate gain in price reduction, heedless that each reduction is bringing them nearer the day when the resulting demoralization of the industry will force higher prices.

As prices are cut and earnings drop or disappear producers and manufacturers are forced out of business and distributors and consumers have to pay living prices to those who survive.

All this is elementary economics, demonstrated time after time in actual experience, but there are thousands upon thousands of distributors and millions of consumers in all lines who never take their eye off their immediate individual gain in some price cut to look around at what is happening in the world about them.

The industry that produces the raw material and manufactures the products they sell or use means absolutely nothing to them, or they think so. And when price cutting drops below cost as in the oil industry and the only way to recover is to increase prices to earn a living profit there is an instant howl of protest.

Ever since the oil code was first mentioned there has been a rising clamor of opposition, altogether out of proportion to the importance of its origin in the oil business. This noisy fractional minority has not come from the producers and manufacturers who constitute the actual oil industry but from those who have attached themselves to the oil business as traders. If they can buy under the open market today they can use that cut-price to establish a quotation that they will want to buy below tomorrow.

Their primary interest is to buy as cheaply as possible, no matter what their price cutting may do to the refiner and producer.

Of course they do not want prices stabilized. The more chaotic market conditions are the better they can chisel. The longer stabilization is put off the better for them.

So they are denouncing the proposed buying agency that would take the surplus off the market as likely to drive them out of business.

Producers and manufacturers who supply the products in which these traders deal may not unreasonably insist that it is even more important that the producer and refiner should not be driven out of business by price cutting.

The oil code is part of the National Recovery program aimed to stabilize business. The elimination of overproduction and price cutting is essential to stability in the old industry. No individual advantage can be permitted to handicap a whole industry.

There will be, of course, the usual palaver about protecting the consuming public and the ringing of the tocsin about monopoly in an effort to postpone stabilization, but Secretary Ickes now knows enough about the oil business to appraise these alarms at their proper self-interested value.

Senator Borah's statement that he does "not find, nor see, any reviewing power upon the part of any public official or impartial and disinterested tribunal" displays a characteristic inability to see facts that contradict his assertions. Both the oil code and the agreements explicitly provide for official review and supervision in every particular.

All Set to Go

The oil situation is steadily improving as confidence in the outcome grows stronger.

Delay in approval of the national petroleum agency and marketing agreements, maneuvering due to the removal of the half cent Federal emergency tax on gasoline January 1, and the focusing of attention upon the test suit at Houston have been used as scarecrows without shaking that confidence.

There no longer is any doubt that overproduction of crude can be checked or that the gasoline output can be brought into line with the oil administration's limits.

Alarming reports regarding the output of hot oil in East Texas, which have been used to weaken the gasoline market, are now set at rest. Opinion in the best informed quarters is that it does not exceed 27,000 barrels a day, surely not sufficient, with strict regulation elsewhere, to have a determining weight on a total production of 2,300,000 barrels daily.

While there may be some disposition in certain quarters to take the raising of legal or constitutional issues as an encouragement to attempt evasion of regulations it is not to be supposed that the industry is to be thrown back into chaos.

The apparent tendency at Washington is to give the oil industry whatever power may be necessary to enable it to stabilize itself as an essential part of the general recovery program.

Now, that, for the first time, representatives of the industry have united on a definite program and have developed a country-wide organization to carry it out, it is all set to go.

Of course, there will be criticism; some constructive, which will lead to proper amendment; some destructive, which will lend to exposure of the selfish purposes behind it, whether personal gain or political ambition.

But with the industry determined to see the thing through and with the government lending every assistance, progress is assured.

Having struggled thus far it is unthinkable that the industry will submit to being forced back into confusion and demoralization by cheating and chiseling.

The improvement in the oil situation since June, caused by the hope of stabilization, is a convincing demonstration of what can be realized when stabilization is actually effected.

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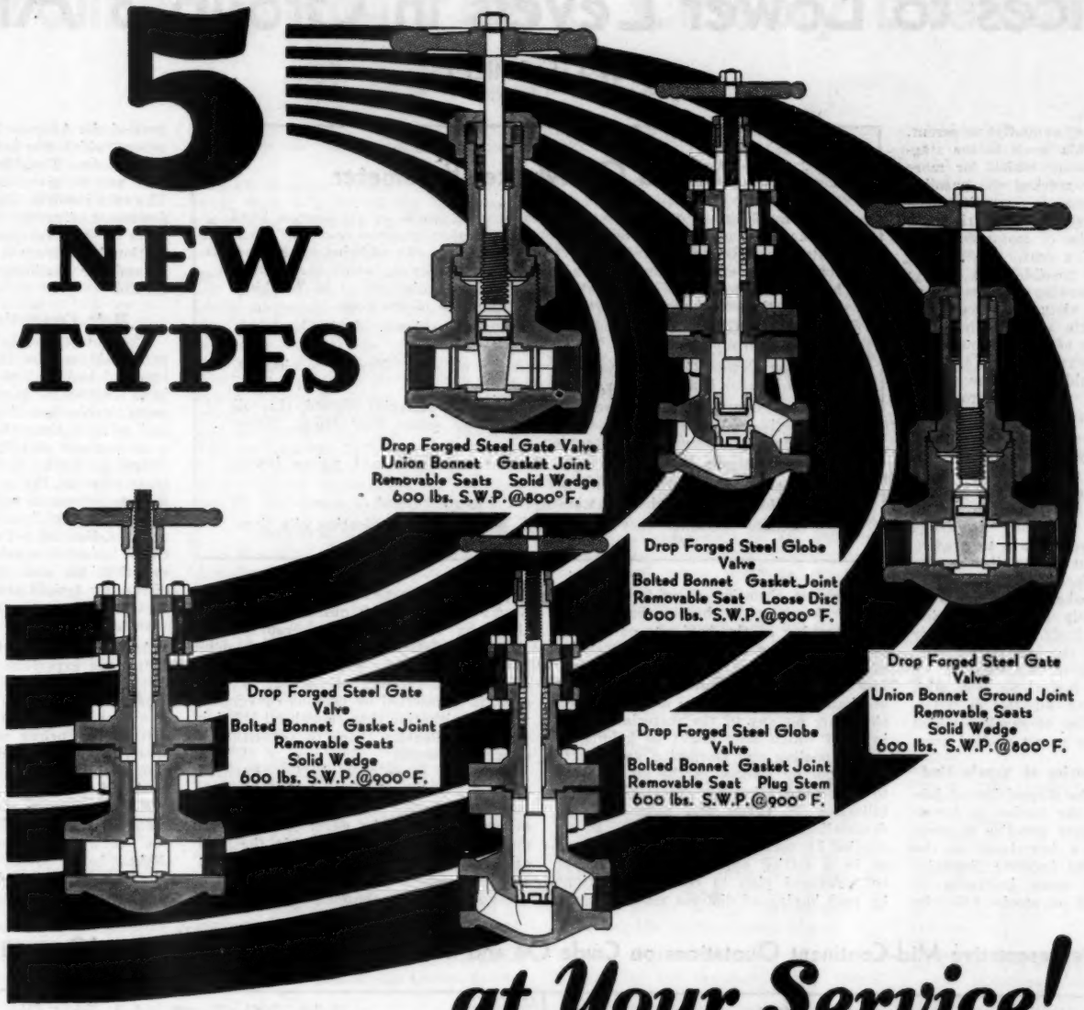

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Usual Year-End Market Dullness Drags Gasoline Prices to Lower Levels in Group 3 Area

By T. F. SMILEY

Year-end dullness, annually recurrent, added its weight this week to the stagnation and uncertainty which for more than a month had marked the gasoline market in Oklahoma (Group 3) territory. The result was that quotations on almost the whole list of motor fuels receded an eighth of a cent.

It was believed possible that buying for the Christmas holidays, embracing as they do this year virtually three days, might inject a little strength into the trading at the close of the present week, but few observers expected this renewal of vigor, if it should materialize at all, to be sufficiently robustious to push prices to higher figures.

Some of the more optimistic ventured to say that a moderate increase in the volume of buying might be looked for next week for delivery after the close of the year. Whether this buying would be of such kind as materially to affect prices nobody seemed to care to predict.

It was pointed out that while the consumption of motor fuel by delivery trucks and motor buses takes a big jump in the week immediately preceding Christmas day, the day itself may see lower consumption than the usual business day, with the state of the weather always an important factor. So even with a three-day vacation on the calendar, the prospective buying of gasoline which attends it is nothing to get excited over.

Want Low Inventories at Year's End

Contributing to the disposition of jobbers to stay out of the market as far as possible is the common practice of keeping inventories to a low level at the close of the year to improve financial statements and in some instances to avoid taxes imposed on stocks held. In the present situation there is the additional deterrent to buying existing in the dropping of the half-cent emergency tax on January 1, 1934, and the desire of jobbers to save themselves from the loss involved in the automatic decline of one-half cent in the price of gasoline on that date on any of the material bought in 1933 which they might be holding.

The pooling and marketing agreements submitted by leaders in the oil industry to Secretary Ickes as agencies for stabilization of prices and elimination of demoralizing competition have been studied by marketers, and there is found to be a settled opinion that success of the proposed plan to remedy conditions by pool buying of distress material must depend in large measure upon the thoroughness with which unfair practices in the East Texas Field are eradicated.

Notwithstanding excellent work done by Federal inspectors in curbing the production and refining of hot oil in that area, it is asserted by persons conversant with the situation that enough oil is being produced illegally there to constitute a dangerous factor.

Although more than half a hundred prosecutions have been started by the Department of the Interior as a result of evidence obtained by government agents on the ground, some persons in the field are still producing and processing hot oil and apparently will continue to until a decision has been handed down in the case of the Amazon Petroleum Corp. and others, which was heard in Federal Court in Houston, Tex., last week. A decision will not be given till after January 4. The case involves the whole matter of enforcement of proration schedules by either state or Federal agents. It attacks the National Recovery Act as unconstitutional and the National Petroleum Code as invalid.

More Prosecutions Now Futile

The futility of beginning more prosecutions before the fundamental questions involved in this Federal Court case have been disposed of is recognized by nobody more clearly than the offending producers and refiners themselves.

A purchase of 1,000,000 gallons of 400 endpoint gasoline for coastwise shipment from some of the larger refiners in the Kilgore, Overton and Arp districts has eased the situation for these particular refiners. Smaller refiners in the same district, however, unable to meet buyers' specifications and thus take advantage of the low freight rates to the Gulf, must continue to assume the disadvantage of adverse freight differentials.

As had been expected, natural gasoline quotations experienced a further decline throughout all grades, the recessions ranging from a quarter to three-eighths of a cent. There was nothing to indicate that higher prices were immediately in prospect. "No demand" was the terse and all-sufficient explanation of the dullness in this division.

Kerosenes were steady, with no price changes. Furnace oils were firm. Fuel oils showed increased strength, with slightly better prices for the 24-26 grade. The rest of the market showed little or no change from the preceding week.

Refined Oil Market Barometer

Unwillingness of jobbers to be caught with stocks of gasoline on hand at the close of the year depressed prices of that product in some areas. Natural gasoline continued its drift to lower levels. In addition to the customary year-end dullness buyers manifest hesitancy to enter the market before the question of price stabilization has been disposed of in Washington. Listless trading expected until after the turn of the year.

Mid-Continent—Gasoline and natural gasoline down. Fuel oils strong. Kerosene steady.

East Coast—Gasoline, kerosene and gas oil slow. Few price changes. Export market looking better.

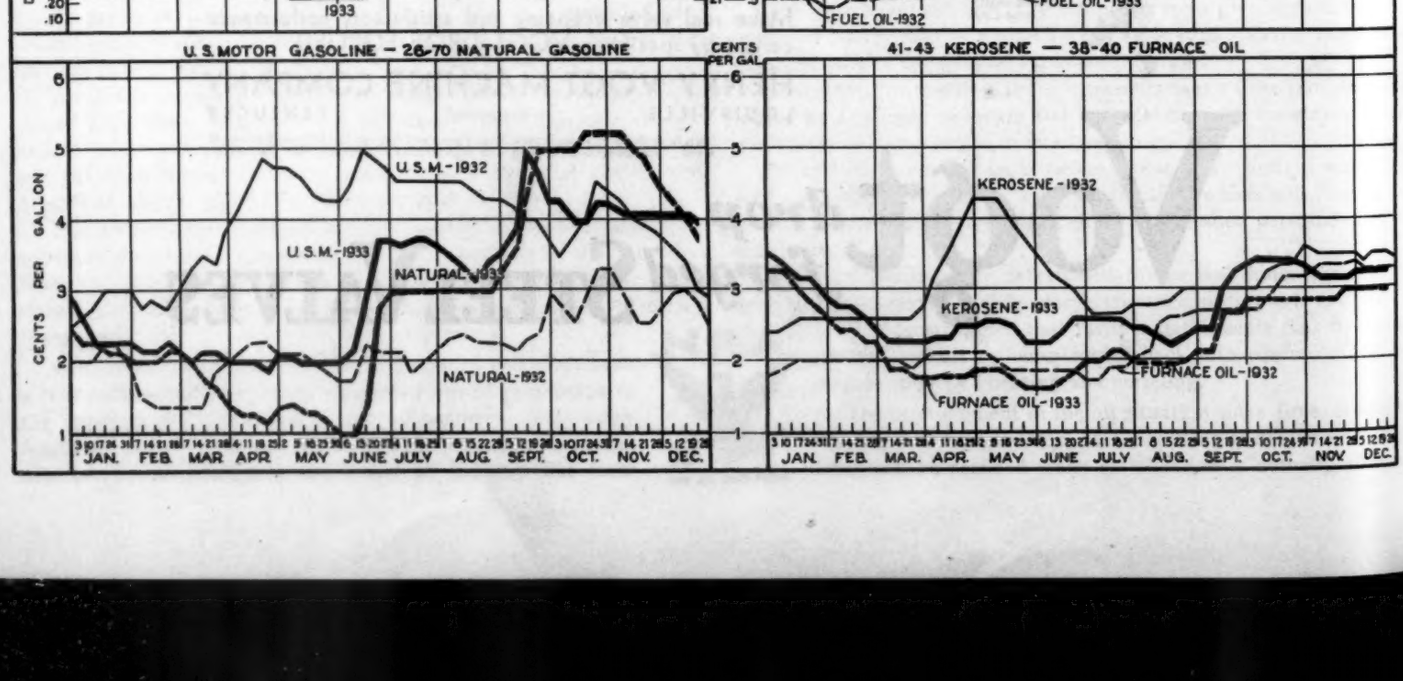
Gulf Coast—Gasolines weak, with plenty of material offered. Gas oil and distillates have easier undertone, but fuels scarce and strong. Kerosenes tight. Lubricants strengthening.

Pennsylvania—Gasolines soft. Kerosene plentiful and prices lower. Bright stock and cylinder stocks firmer.

California—General market steady. Prices unchanged.

Chicago—Gasoline easy and spotty. Kerosene dull. Heating oils firm.

Representative Mid-Continent Quotations on Crude Oil and Refined Products Basis Oklahoma (Group 3)



Inquiries for Exports in the East Coast Markets; Gasoline Buying Plan Is Closely Examined

By C. O. WILLSON
New York Bureau, The Oil and Gas Journal

NEW YORK, Dec. 18.—The East Coast refinery market over the past week was devoid of important developments. The trade had assumed a week ago that within a few days the official action of the Government at Washington in regard to recent recommendations of the P. & C. committee involving the operation of a buying agency for surplus crude and refinery products would be made known. At this writing the Government had not announced its decision and the buyers and sellers were continuing to mark time.

Spot trading was dull but movement on contracts for all products appeared satisfactory. In the export end there have been several inquiries in the market since the first of December for gasoline by European buyers. The prices quoted have ranged from 5¾ to 6 cents for the 64-66, 375 grade at the Gulf Coast and some business has been placed at the low of this spread for January lifting. Apparently several cargoes will have to be placed within the next month due to an actual need of the material by the buyers. The latter have indicated their willingness to buy substantial quantities at prices ranging from one-fourth to one-half cent under the low of the present market. Sellers, many of whom are anticipating higher rather than lower prices after the first of the year, are refusing to accept these lower prices and in the meanwhile some cargo business is reported to have gone to Russian and Rumanian sellers. Conditions due in part to the present rate of exchange continue to favor the sellers in the United States and there are those among the latter who are confident that the buyers will be forced to accept their view of the markets within the next 30 days. The weakness in the Mid-Continent natural gasoline market has been a disturbing factor in both the export and coastwise gasoline market. This product was exceptionally strong for several weeks with the prices at the Gulf Coast for all grades sufficiently high so that they were not competitive in the regular refinery gasoline market.

In the domestic gasoline market prices range from 6 cents for the low octane material to 6¼ cents for the middle octane and 6½ cents for the premium octane of 65 and above. These are the spot prices that have prevailed for several weeks. It is expected that the domestic movement will continue slow until after January 1, when the one-half cent emergency Federal tax on gasoline will be dropped. This tax is paid by the manufacturers and those buying from them naturally do not desire to have large quantities in storage on which they have paid the one-half cent tax. It is assumed that the tank car, tank wagon and service station prices in this territory will all be reduced one-half cent on the day that the tax ceases to be effective.

Opposition to Buying Plan

In regard to gasoline there is considerable opposition in this territory to the plan proposed at Washington of establishing a petroleum buying agency for the purpose of supporting the market from time to time by buying excess gasoline which otherwise would be thrown on the market at distress prices. There is a substantial jobber and dealer business in this territory based on purchases of gasoline in the open market. In many cases this gasoline is purchased from a refiner at prices under the markets as established by the major refiners. The bulk of the products over the past two years have come from the Gulf Coast, being shipped by tanker to independent jobbers with terminal facilities at several points along the coast extending from New England to Florida.

The viewpoint of these operators is summarized in a protest of Frank Hart, president of the Hartol Products Corp., one of the largest independent marketers in the eastern part of the United States. In a wire to Secretary of the Interior Ickes, Mr. Hart refers to the plan that has been submitted to the secretary with the approval of the P. and C. committee and says, in part: "In the interests of millions of consumers and of independents in the oil industry, I protest against the adoption of these proposals as submitted to you and against the establishment of a national petroleum agency under the control of these 24 companies. The plan was originated by the major oil companies without fair consideration of the rights of the consuming public and without consideration of independents in the business. Both groups have had no opportunity publicly to state their objections to the so-called pool and marketing agreement.

"Adoption of these proposals will give to the major companies complete monopolistic control over sources of supply and price-fixing powers without limitation and without safeguards to the public or to independent companies. The proposals as published would result in practical delegation of your powers as federal petroleum administrator to the major oil companies. Approval and adoption of the proposals as submitted would accomplish for the proponents of price control all their objectives without public hearings."

Due to this and other protests which are expected to be filed at Washington within a few days many are predicting here that the latest plan will not be approved by government representatives until hearings are held. Some have viewed this possibility of further postponement as pointing to weakness in gasolines due to the fact that certain sellers have been refusing to sell gasoline in storage in expectation of higher prices due to the expected action of the Government in approving the buying agency plan.

Fuel Oil Prices

Following are the bunker and Diesel fuel oil prices at representative domestic and Canadian distributing points as posted by the Standard Oil Co. of New Jersey (prices per barrel of 42 gallons unless otherwise noted):

Atlantic Coast ports—	Bunker	Diesel
New York	*$1.20	†$1.95
Baltimore, Md.	*1.20	†1.95
Norfolk, Va.	*1.20	†1.95
Charleston, S. C.	1.15	1.95
Savannah, Ga.	1.15	4.5c gal.
Jacksonville, Fla.	*1.15	4.5c gal.
Miami, Fla.	(1)	
Boston, Mass.	*1.20	†1.95
Portland, Me.	1.30	2.05
Providence, R. I.	1.20	1.95
Philadelphia, Pa.	1.20	1.95
Gulf Coast ports—		
Port Tampa, Fla.	1.15	4.5c gal.
Tampa, Fla.	*1.15	....
Baton Rouge, La.	‡1.05	‡1.80
New Orleans, La.	‡1.05	‡1.80
Beaumont, Tex.	1.05	1.80
Magnetco, Tex.	1.05	1.80
Sabine, Tex.	‡1.15	‡1.90
Houston, Tex.	1.05	1.80
Baytown, Tex.	1.05	1.80
Texas City, Tex.	1.05	(1)
Galveston, Tex.	‡1.05	1.80
Harbor Island, Tex.	1.05	....
Ingleside, Tex.	1.05	1.80
Port Aransas, Tex.	1.05	....

*For barging add 5 cents per barrel, minimum 1,500 bbls. †For barging add 6¼ cents per barrel, minimum 1,500 bbls. ‡For barging add 5 cents per barrel, minimum 1,000 bbls. §By barge 2,000 bbls., no terminal deliveries. ¶For barging add 5 cents per barrel, minimum 1,200 bbls. ‖Subject to inquiry.

Canada (Canadian currency) excluding Canadian sales tax of 5 cents per barrel:

	Bunker	Diesel
Halifax	$1.35	$2.30
Montreal	*1.50	2.37
Cote St. Paul (Lachine Canal)	1.60	....
Quebec	1.60	....
Levis, Quebec	....	7.7c L.G.
St. John, N. B.	‡1.65	(1)
Sarnia, Ontario	1.50	(1)
Toronto, Ontario	(1)	(1)
Ioco, B. C.	§1.20	§1.75
Prince Rupert, B. C.	§1.40	§2.255
North Vancouver, B. C.	....	§1.75
Vancouver, B. C.	§1.20	(1)
Victoria, B. C.	§1.35	§1.905

*Lighterage may be available at 7½ cents per barrel, minimum charge $150. (Decem-

(Continued on Page 40)

American Petroleum Institute Weekly Refinery Statistics

Figures below reported for week by American Petroleum Institute. (1) Per cent refinery capacity represented. (2) Daily average crude runs to stills. (3) Total motor fuel stocks. (4) Gas oil and fuel oil stocks. All figures in 42-gallon barrels.

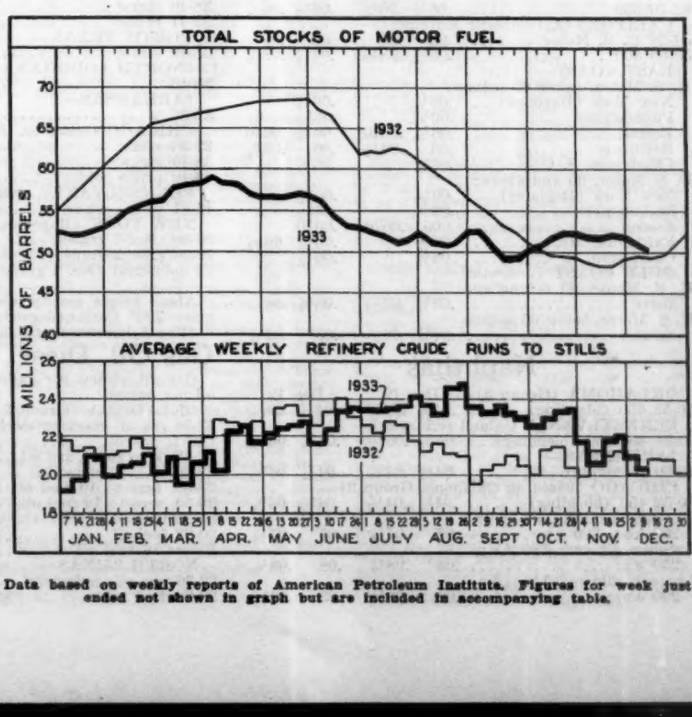
Week Ending December 16, 1933, Compared to Week Ago

	Week Ending Dec. 16, 1933				Week Ending Dec. 9, 1933			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
East Coast	100.0	440,000	14,246,000	7,376,000	100.0	420,000	14,059,000	7,686,000
Appalachian	92.6	89,000	2,043,000	1,087,000	92.6	85,000	2,072,000	1,060,000
Ind., Ill., Ky.	97.3	293,000	7,107,000	4,430,000	97.3	281,000	6,902,000	4,471,000
Okla., Kans., Mo.	82.1	197,000	5,516,000	2,792,000	82.1	189,000	5,562,000	2,848,000
Inland Texas	60.2	93,000	1,205,000	1,725,000	60.2	78,000	1,229,000	1,725,000
Texas Gulf	98.1	474,000	4,862,000	6,315,000	98.1	449,000	4,326,000	6,549,000
Louisiana Gulf	100.0	101,000	1,433,000	1,659,000	100.0	96,000	1,445,000	1,924,000
N. La. and Ark.	92.6	50,000	227,000	540,000	92.6	45,000	238,000	542,000
Rocky Mtn.	78.8	33,000	883,000	716,000	78.8	29,000	885,000	716,000
California	96.9	421,000	13,281,000	92,414,000	96.9	369,000	14,089,000	93,083,000
Total U. S.	92.4	2,191,000	50,802,000	120,054,000	92.4	2,042,000	50,807,000	121,604,000

(Estimates on total motor fuel stocks, Bureau of Mines basis, temporarily discontinued)

Week Ending December 16, 1933, Compared to Year Ago

	Week Ending Dec. 16, 1933				Week Ending Dec. 17, 1932			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
East Coast	100.0	440,000	14,246,000	7,376,000	99.1	464,000	11,686,000	8,755,000
Appalachian	92.6	89,000	2,043,000	1,087,000	95.0	85,000	1,761,000	744,000
Ind., Ill., Ky.	97.3	293,000	7,107,000	4,430,000	97.5	279,000	6,730,000	3,873,000
Okla., Kans., Mo.	82.1	197,000	5,516,000	2,792,000	84.9	209,000	4,838,000	2,743,000
Inland Texas	60.2	93,000	1,205,000	1,725,000	56.4	82,000	1,386,000	2,123,000
Texas Gulf	98.1	474,000	4,862,000	6,315,000	97.7	373,000	5,325,000	5,729,000
Louisiana Gulf	100.0	101,000	1,433,000	1,659,000	97.3	104,000	1,192,000	2,821,000
N. La. and Ark.	92.6	50,000	227,000	540,000	88.6	49,000	278,000	474,000
Rocky Mtn.	78.8	33,000	883,000	716,000	90.3	29,000	1,111,000	467,000
California	96.9	421,000	13,281,000	92,414,000	94.6	410,000	15,125,000	99,485,000
Total U. S.	92.4	2,191,000	50,802,000	120,054,000	91.6	2,090,000	49,935,000	129,913,000



Data based on weekly reports of American Petroleum Institute. Figures for week just ended not shown in graph but are included in accompanying table.

REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement except as otherwise noted

EXCLUSIVE OF TAXES

The following quotations are exclusive of the Federal excise taxes of 1½ cents a gallon on gasoline and 4 cents on lubricating oils, which became effective June 17, 1933.

Refinery Gasolines

OKLAHOMA (Group 3)—	Dec. 19		Dec. 12	
*U. S. Motor grades:				
Third grade	.04	.04⅛	.04⅛	.04¼
Regular	.04⅝	.04⅞	.04¾	.05
Premium	.05¼	.05½	.05⅝	.05⅝
60-62 400 grades:				
Third grade	.04⅛	.04¼	.04¼	.04⅜
Regular	.04⅞	.05⅜	.05	.05½
Premium	.05½	.05⅝	.05⅝	.05¾
64-66 390	.04⅜	.04¾	.04⅝	.05
64-66 375	.04¾	.05	.04⅞	.05⅛
68-70 350	.05⅛	.05¼	.05⅛	.05¼
NORTH TEXAS—				
U. S. Motor grades:				
Third grade	.04	.04⅛	.04	.04⅛
Regular	.04½	.04⅞	.04½	.04⅞
Premium	.05¼	.05½	.05¼	.05½
60-62 400	.04¼		.04¼	
64-66 390	.04½		.04¾	
64-66 375	.04¾		.05	
64-66 360	.05⅛	.05¼	.05⅛	.05¼
†NORTH LOUISIANA—				
U. S. Motor grades:				
Third grade	.04⅜		.04¾	
Regular	.05½		.05½	
Premium	.06		.06	
60-62 400	.04½		.04½	
†ARKANSAS—				
U. S. Motor grades:				
Third grade	.04⅜		.04¾	
Regular	.05⅝		.05⅝	
Premium	.06		.06	
CHICAGO (based on Oklahoma Group 3)—				
U. S. Motor grades:				
Third grade	.04	.04¼	.04	.04⅜
Regular	.04⅞	.05⅛	.04⅞	.05½
Premium	.05¼	.05½	.05¼	.05½
60-62 400	.04⅛	.04¼	.04⅛	.04⅜
64-66 375	.04⅞	.05⅛	.04⅞	.05⅛
68-70 360	.05⅛	.05⅜	.05¼	.05⅝
Aviation fighting grade	.05½	.05⅞	.05½	.06

***Octane Ratings**—The following octane ratings apply to the three grades of U. S. Motor gasoline: Regular 60-64 octane number, premium 65 and above octane number; third grade, 59 and below octane number. Octane ratings determined by C.F.R. Motor Method.

†For Arkansas, Louisiana and Mississippi delivery.

PENNSYLVANIA (inland refineries)—				
58-62 U. S. Motor:				
Below 60 octane	.05⅜		.05½	
60-64.9 octane	.06⅝		.06⅝	
65-65.9 octane	.07		.07	
70 octane and higher	.07⅜		.07⅜	
64-66 375	.06	.06¼	.06	.06¼
68-70 350	.06½	.06¾	.06½	.06¾
CALIFORNIA (domestic movement)—				
54-58 U. S. Motor	.06	.08	.06	.08
58-60 400	.06½	.08½	.06½	.08½
EAST COAST—				
U. S. Motor, below 65 octane:				
New York (Bayonne)	.06¼		.06¼	
Philadelphia	.06¼		.06¼	
Boston	.06¼	.0640	.06¼	.0640
Baltimore	.06	.06¼	.06	.06¼
Charleston, S. C.	.06¼		.06¼	
U. S. Motor, 65 and above:				
New York (Bayonne)	.06½		.06½	
Philadelphia	.06½		.06½	
Boston	.065	.0670	.0670	
Baltimore, Md.	.06½		.06¼	.06½
Charleston, S. C.	.06½		.06½	
GULF COAST (domestic)—				
U. S. Motor, 65 octane and above	.05¼	.05½	.05¾	.06
U. S. Motor, below 65 octane number	.04¼	.04½	.05	.05¼

Naphthas

OKLAHOMA (Group 3)—	Dec. 19		Dec. 12	
50-52 450 (blending)	.04⅛	.04¼	.04⅛	.04¼
PENNSYLVANIA (inland refineries)—				
50-54 430-450 (blending)	.05⅜	.05½	.05⅜	.05½
†ARKANSAS—				
48-50 (blending)	.04½	.04¾	.04¼	.04½
CHICAGO (based on Oklahoma Group 3)—				
50-52 450 (blending)	.04¼	.04½	.04½	.04¾
Cleaners' naphtha, 56-58 gr., 200 i.b.p.-320 e.p.	.07	.07¼	.07	.07¼
Lacquer diluent, 180 i.b.p.-250 e.p.	.08	.08¼	.08	.08¼
Lacquer diluent, 140 i.b.p.-200 e.p.	.09	.09¼	.09	.09¼
Rubber solvent, 68-70 gr., 100 i.b.p.-300 e.p.	.07	.07½	.07⅛	.07½
Stoddard solvent, 300 i.b.p.-410 e.p., over 83° flash	.06⅜	.06⅝	.06⅜	.06⅝
Pet. thinner, 290-300 i.b.p.-415 e.p., over 83° flash	.06⅛	.06¼	.06	.06¼
V.M.&P. naphtha, 56-58 gr., 190-200 i.b.p.-330 e.p.	.06¾	.07	.06½	.07
Petroleum spirits	.05⅞	.06¼	.05¾	.06¼

Natural Gasolines

OKLAHOMA (Group 3)—	Dec. 19		Dec. 12	
Grade 18-55	.04½	.04¾	.04⅞	.05
Grade 26-70	.03¾		.04	
Low vapor pressure grades:				
15 lb. v.p. (max.)	.05	.05¼	.05¼	.05½
11 lb. v.p. (max.)	.05¼		.05½	
NORTH TEXAS—				
Grade 18-55	.04½	.04¾	.04⅞	.05
Grade 26-70	.03½		.04	
Low vapor pressure grades:				
15 lb. v.p. (max.)	.05	.05¼	.05¼	.05½
11 lb. v.p. (max.)	.05¼		.05½	
NORTH LOUISIANA—				
Grade 26-70	.03⅞		.04⅜	
CALIFORNIA—				
75-85 375	.05	.06	.05	.06

Kerosenes

(All kerosenes water white)

OKLAHOMA (Group 3)—	Dec. 19		Dec. 12	
41-43	.03¼	.03½	.03¼	.03½
42-44	.03½	.03⅝	.03½	.03⅝
NORTH TEXAS—				
40-41	.03⅛	.03¼	.03⅛	.03¼
41-43	.03¼	.03⅜	.03¼	.03⅜
†NORTH LOUISIANA—				
41-43	.03¾		.03¾	
42-44	.04		.04	
†ARKANSAS—				
41-43	.03¾		.03¾	
PENNSYLVANIA (inland refineries)—				
45	.04⅝		.04¾	
46	.04⅞		.05	
47	.05⅛		.05¼	
CHICAGO (based on Oklahoma Group 3)—				
41-43	.03¼	.03½	.03¼	.03½
42-44	.03⅝	.03½	.03⅝	.03⅝
*CALIFORNIA—				
38-40 high burning test	.04¼	.04¾	.04¼	.04¾
NEW YORK (Bayonne, N. J.)—				
41-43	.05¼		.05¼	.05½
GULF COAST (domestic)—				
41-43 water white	.04½	.04¾	.04½	.04¾

*For Pacific Coast consumption.

†For Arkansas, Louisiana and Mississippi delivery.

Furnace Oils and Tractor Fuels

OKLAHOMA (Group 3)—	Dec. 19		Dec. 12	
32-36 straw	.03	.03⅛	.03	.03⅛
36-38 straw	.02⅞	.03	.02⅞	.03
38-40 straw	.03	.03⅛	.03	.03⅛
39-41 prime	.03⅛	.03¼	.03⅛	.03¼
NORTH TEXAS—				
38-40 straw	.02⅞	.03	.02⅝	.02¾
†NORTH LOUISIANA—				
36-40	.03		.03	
†ARKANSAS—				
32-36	.03⅛		.03	
CHICAGO (based on Oklahoma Group 3)—				
32-36 straw	.03⅛	.03⅜	.03⅛	.03¼
38-40 straw	.03⅛	.03¼	.03⅛	.03¼
38-40 prime white	.03¼	.03⅜	.03¼	.03⅜
PENNSYLVANIA (inland refineries)—				
40-41 prime white	.04⅜	.04½	.04⅜	.04½
NEW YORK (Bayonne, N. J.)—				
36-40 (No. 1 grade)	.05½	.06	.05½	.06
32-36 (No. 2 grade)	.04½	.05	.04½	.05
21 industrial (No. 4 grade)	.04	.04½	.04	.04½

Above prices are for distillate oils of zero cold test under 190° flash and good odor.

†For Arkansas, Louisiana and Mississippi delivery.

Gas Oil, Diesel Oil and Fuel Oil

Gas oil quoted per gallon basis; Diesel oil and fuel oil per barrel.

OKLAHOMA (Group 3)—	Dec. 19		Dec. 12	
32-36 gas oil cracking stock	.01⅞	.02⅛	.01⅞	.02⅛
U.G.I. gas oil	.02⅛		.02⅛	
32-36, zero to 15 gas oil	.02⅞	.03	.02¾	.03
28-30, No. 3 burner oil	1.05	1.10	1.05	1.10
28-30, zero to 10 fuel oil	.95	1.00	.95	1.00
26-30, zero to 10 fuel oil	.85	.95	.85	.95
24-26 fuel oil	.65	.70	.62½	.65
20-22 fuel oil	.55	.60	.55	.60
Below 16 fuel oil	.50	.55	.50	.55
NORTH TEXAS—				
32-36 gas oil, industrial	.02		.02	
22-26 fuel oil	.57½	.62½	.57½	.62½
Below 20 fuel oil	.47½	.50	.47½	.50
†NORTH LOUISIANA—				
32-36 gas oil, zero	.03		.03	
14-16 fuel oil	.65	.70	.65	.70
†ARKANSAS—				
30-32 gas oil, zero	.02¾		.02¾	
32-36 furnace oil	.03		.03	
14-16 fuel oil	.65	.70	.65	.70
CHICAGO (based on Oklahoma Group 3)—				
32-36 gas oil, industrial	.01⅞	.02	.01⅞	.02
28-30 (zero) fuel oil	.95	1.05	.95	1.05
26-28 (zero) fuel oil	.80	.85	.80	.85
22-26 (zero) fuel oil	.70	.75	.70	.75
18-22 (zero) fuel oil	.60	.65	.60	.65
Below 18 fuel oil	.40	.45	.40	.45

Note: Fuel oils of more than 40 cold test generally 5 to 15 cents per barrel less in all areas than shown in above tables.

†For Arkansas, Louisiana and Mississippi delivery.

PENNSYLVANIA (inland refineries)—				
36-40	.04	.04¼	.04⅛	.04¼
CALIFORNIA—				
30-34 gas oil per bbl.	.95	1.05	.95	1.05
27 plus Diesel	.95	1.05	.95	1.05
15-19 bunker (at tidewater)	.55	.65	.55	.65
15-19 (cargo lots)	.55	.65	.55	.65
15-19 (tank cars)	.45	.65	.45	.65
GULF COAST—				
28-30 gas oil	.03¾		.03¾	
28-30 Diesel	1.80		1.80	
Bunker C (bulk cargoes)	.92½	.95	.92½	.95
Bunker C (bunkers)	1.05		1.05	
NEW YORK (Bayonne, N. J.)—				
28 plus, gas oil	.04	.04¼	.04	.04½
28-30 Diesel (lighterage 6½ cents per bbl.)	1.95		1.95	
28-30 Diesel (tank cars)	.04½		.04½	
*Bunker C (to ocean-going ships in N. Y. harbor)	1.20		1.20	

*Lighterage charge 5 cents per barrel additional.

Petroleum Coke*

Prices per ton f.o.b. refineries in Chicago area.

	Dec. 19	Dec. 12
Breeze (screenings)	4.50	4.50
Still run	5.50	5.50
Direct from still	6.50	6.50
Lump and egg	8.00	8.00

*Refineries will absorb freight to 80 cents a ton.

Neutral Oils

(Vis. at 100° F. unless otherwise stated, and color N.P.A.)

OKLAHOMA (Group 3)—	Dec. 19		Dec. 12	
Zero to 10 Cold Test:				
150-3	.07¼	.07½	.07¼	.07½
180-3	.08½	.08¾	.08½	.08¾
180-4	.08¼	.08½	.08¼	.08½
200-3	.09	.09¼	.09	.09¼
200-4	.08¾	.09	.08¾	.09
240-3	.11	.11¼	.11	.11¼
240-4	.10¾	.11	.10¾	.11
280-3	.12	.12¼	.12	.12¼
280-4	.11½	.11¾	.11½	.11¾
300-3½	.12¾	.13	.12¾	.13
350-3½	.13¾	.14	.13¾	.14
400-4	.14¾	.15	.14¾	.15
500-4½	.15¾	.16	.15¾	.16
100-2 paraffin oil	.05	.05¼	.05	.05¼
15-30 Cold Test:				
200-3	.08	.08¼	.08	.08¼
200-4	.07¾	.08	.07¾	.08
240-3	.10	.10¼	.10	.10¼
240-4	.09¾	.10	.09¾	.10
280-3	.11	.11¼	.11	.11¼
280-4	.10¾	.11	.10¾	.11
GULF COAST—				
Pale Oils:				
200-3	.06¼	.06½	.06¼	.06½
300-3	.07	.07½	.07	.07½
500-3½	.08		.07¾	.08¼
750-3½	.08½	.09	.08½	.09
1,200-3½	.09½		.09⅛	.09½
2,000-4	.10¼	.10½	.10	.10½
Red Oils:				
200-5-6	.05½		.05½	
300-5-6	.06	.06½	.06	.06½
500-5-6	.06¾	.07¼	.06¾	.07¼
750	.07½	.08	.07½	.08
1,200-5-6	.08¼	.08⅝	.08¼	.08⅝
2,000-6 plus	.09½	.09¾	.09½	.09¾
CALIFORNIA—				
Pale Oils:				
100-2½-3	.23	.25	.23	.25
200-2½-3	.23	.25	.23	.25
300-3-3½	.23	.25	.23	.25
350-3-4	.23	.25	.23	.25
400-3-4	.23	.25	.23	.25

450-3-4	.23	.25	.23	.25
550-3-4	.23	.25	.23	.25
600-3-4	.23	.25	.23	.25
Red Oils:				
200-4-5	.23	.25	.23	.25
300-5-6	.23	.25	.23	.25
350-5-6	.23	.25	.23	.25
400-5-6	.23	.25	.23	.25
450-5-6	.23	.25	.23	.25
500-5-6	.23	.25	.23	.25
600-5-6½	.23	.25	.23	.25
700-6½ plus	.23	.25	.23	.25
750-6½ plus	.23	.25	.23	.25
900-6½ plus	.23	.25	.23	.25
PENNSYLVANIA—				
150 vis. at 70° F., No. 3, 400-405:				
Zero pour test	.21½	.21¾	.21½	.21¾
10 pour test	.20¾	.21	.20¾	.21
15 pour test	.19¾	.20	.19¾	.20
25 pour test	.19	.19¼	.19	.19¼
180 vis. at 70° F., No. 3, 25 pour test	.22	.22¼	.22	.22¼
200 vis. at 70° F., No. 3:				
Zero pour test	.26¾	.27	.26¾	.27
10 pour test	.25½	.25¾	.25½	.25¾
15 pour test	.24½	.24¾	.24½	.24¾
25 pour test	.24	.24¼	.24	.24¼

Bright and Steam Refined Stocks

OKLAHOMA (Group 3)—	Dec. 19		Dec. 12	
630 light green	.09½	.12½	.09½	.12½
600 light green S.R.	.07	.09	.07	.09
600 dark green S.R.	.05	.07	.05	.07
Bright Stocks:				
190-200 D	.24	.25	.24	.25
150-160 D, 0-10	.22¼	.22½	.22¼	.22½
150-160 D, 10-25	.21¾		.21¾	
150-160 D, 25-40	.21¼		.21¼	
150-160 E	.21¼		.21¼	
PENNSYLVANIA—				
600 S.R.	.15½		.15½	
650 S.R.	.18	.18½	.18	.18½
600 Pennsylvania flash	.18	.18½	.18	.18½
600 Warren E filtered	.19¼		.19¼	
Pennsylvania Grade bright stock:				
No. 8 color, 145-50 at 210; 540-550 flash:				
10 pour test	.27½		.27½	
15 pour test	.26	.26½	.26	.26½
20 pour test	.25¼	.25¾	.25¼	.25¾
25 pour test	.25	.25½	.25	.25½

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—	Dec. 19		Dec. 12	
124-126 white crude scale	.03¾		.03¾	
PENNSYLVANIA—				
122-124	.0415	.0420	.0415	.0420
124-126	.0420	.0425	.0420	.0425
NEW YORK HARBOR—				
124-126 crude scale	.04	.04⅛	.04	.04⅛
Fully refined wax, in bags:				
120-122 (a.m.p.)	.0430		.0430	
123-125 (a.m.p.)	.0445		.0445	
125-127 (a.m.p.)	.0455		.0455	
130-132 (a.m.p.)	.0495		.0495	
133-135 (a.m.p.)	.0555		.0555	
135-137 (a.m.p.)	.0580		.0580	
Petrolatum in barrels in carload lots:				
Dark green	.01⅞	.02	.01⅞	.02
Amber	.02⅛	.03	.02⅞	.03
Extra amber	.03⅛	.03¼	.03⅛	.03¼
Lily white	.06¾	.06⅞	.06¾	.06⅞
Snow white	.07¾	.07⅞	.07¾	.07⅞
Cream	.05⅝	.05¾	.05⅝	.05¾
CHICAGO (f.o.b. switching district)*—				
122-124	.0465	.0475	.0465	.0475
125-127	.0490	.0500	.0490	.0500
127-129	.0505	.0515	.0505	.0515
130-132	.0565	.0575	.0565	.0575
132-134	.0590	.0600	.0590	.0600

*Cents per pound on carlot orders in burlap bags of 225 lbs. approx. Add 3° F., a.m.p.

Export Prices

GASOLINE

GULF COAST—	Dec. 19		Dec. 12	
U. S. Motor	.05¼	.05⅜	.05¼	.05⅜
60-62 400	.05½	.05⅝	.05½	.05⅝
61-63 390	.05⅝	.05¾	.05⅝	.05¾
64-66 375	.05¾	.06	.05¾	.06
LOS ANGELES, CALIF.—				
U. S. Motor grades:				
53-55 octane	.04½	.05	.04½	.05
55-65 octane	.05	.05¼	.05	.05¼
65-67 octane	.05½	.06	.05½	.06
67-69 octane	.06¼	.06¾	.06¼	.06¾
Above 69 octane	.07	.08	.07	.08
58-60 400 endpoint	.05¼	.06¼	.05¼	.06¼

KEROSENE

GULF COAST—				
41-43 prime white	.04¼		.04¼	
41-43 water white	.04⅜		.04⅜	
44 water white	.04½	.04⅝	.04⅝	
LOS ANGELES, CALIF.—				
41-43 water white	.03¾	.04¼	.03¾	.04¼

LUBRICANTS

NEW YORK (f.a.s. in bbls.)—				
600 Warren E	.25	.26	.25½	.26
600 S.R. unfiltered	.22	.22½	.22	.22½
650 S.R. unfiltered	.24½	.25½	.24½	.25½
600 flash S.R.	.25½	.26	.25½	.26
630 flash S.R.	.29½	.30½	.29½	.30½
Bright stock, No. 8 color	.31½	.32½	.31½	.32½
Bright stock, No. 6½ color, dil.	.30½	.31½	.30½	.31½

NEUTRALS

NEW YORK—Pale Engine Oil, Bulk (vis. at 100)—				
100-2½	.06½	.07	.06½	.07
180-3½	.12	.13	.12	.13
230-3¾	.13	.14	.13	.14
Red Engine Oil, Bulk (vis. at 100):				
200-6	.07½	.08½	.07½	.08½
250-6	.08	.08¾	.08	.08¾
300-6½	.09	.09½	.09	.09½

PARAFFIN WAX (Fully Refined)

NEW YORK (prices per pound)—				
120-122 a.m.p.	.04¼		.04¼	
123-125 a.m.p.	.04⅝		.04⅝	
125-127 a.m.p.	.04½		.04½	
130-132 a.m.p.	.05		.05	
133-135 a.m.p.	.05½		.05½	
135-137 a.m.p.	.05¾		.05¾	

Crude Oil Gravity Table

Degrees gravity—	Oklahoma and Kansas 1	North Texas, Central Texas and East Central Texas 2	North Louisiana and Arkansas 3	Gray County, Texas 4	Carson, Hutchinson and Moore Counties, Texas 5	Conroe, Texas 6	Salt Creek, Wyo. 7	Gulf Coast, Texas and Louisiana 8	Gulf Coast, Texas and Louisiana 9	Caddo, Louisiana 10	Sabine-De Soto, Louisiana 11	Homer, Louisiana 12	Sarepta-Carterville, Louisiana 13	El Dorado, Arkansas 14	Haynesville, Louisiana 15	Miller County, Arkansas 16	Cotton Valley, Louisiana 17
Below 20	....	....	....	....	....	....	....	$.82	$.82	....	....	....	....	....	....	....	....
20-20.9	....	....	....	....	....	....	....	.84	.84	....	....	....	....	....	....	....	....
21-21.9	....	....	....	....	....	....	....	.86	.86	....	....	....	....	....	....	....	....
22-22.9	....	....	....	....	....	....	....	.88	.88	....	....	....	....	....	....	....	....
23-23.9	....	....	....	....	....	....	....	.90	.90	....	....	....	....	....	....	....	....
24-24.9	....	....	....	....	....	....	....	.92	.92	....	....	....	....	....	....	....	....
Below 26	*$.76	....	....	....	....	....	....	....	....	$.63	$.69	$.71	$.75	$.75	$.65	$.62	$.70
26-25.9	*.78	....	....	....	....	....	....	.94	.94	.65	.71	.73	.77	.77	.67	.64	.72
26-26.9	*.80	....	....	....	....	....	....	.96	.96	.67	.73	.75	.79	.79	.69	.66	.74
27-27.9	*.82	....	....	....	....	....	....	.98	.98	.69	.75	.77	.81	.81	.71	.68	.76
28-28.9	*.84	....	....	....	....	....	....	1.00	1.00	.71	.77	.79	.83	.83	.73	.70	.78
Below 29	.84	$.79	0.79	....	....	....	$.84	....	....	....	....	....	....	....	....	....	....
29-29.9	.86	.81	.81	....	....	....	.86	1.02	1.02	.73	.79	.81	.85	.85	.75	.72	.80
30-30.9	.88	.83	.83	....	....	....	.88	1.04	1.04	.75	.81	.83	.87	.87	.77	.74	.82
31-31.9	.90	.85	.85	....	....	....	.90	1.06	1.05	.77	.83	.85	.89	.89	.79	.76	.84
32-32.9	.92	.87	.87	....	....	....	.92	1.08	1.06	.79	.85	.87	.91	.91	.81	.78	.86
33-33.9	.94	.89	.89	....	....	....	.94	1.10	1.07	.81	.87	.89	.93	.93	.83	.80	.88
34-34.9	.96	.91	.91	....	....	....	.96	1.12	1.08	.83	.89	.91	.95	.95	.85	.82	.90
Below 35	....	....	....	$.79	$.69	....	....	....	....	....	....	....	....	....	....	....	....
35-35.9	.98	.93	.93	.81	.71	$1.09	.98	1.12	1.09	.85	.91	.93	.97	.97	.87	.84	.92
36-36.9	1.00	.95	.95	.83	.73	1.11	1.00	1.12	1.10	.87	.93	.95	.99	.99	.89	.86	.94
37-37.9	1.02	.97	.97	.85	.75	1.13	1.02	1.12	1.11	.89	.95	.97	1.01	1.01	.91	.88	.96
38-38.9	1.04	.99	.99	.87	.77	1.15	1.04	1.12	1.12	.91	.97	.99	1.03	1.03	.93	.90	.98
39-39.9	1.06	1.01	1.01	.89	.79	1.17	1.06	1.12	1.13	.93	.99	1.01	1.05	1.05	.95	.92	1.00
40 and over	1.08	1.03	1.03	.91	.81	1.19	1.08	1.12	1.14	.95	1.01	1.03	1.07	1.07	.97	.94	1.02

*The following companies purchasing crude oil in Kansas or Oklahoma, or both, begin their price schedules: Below 25 degrees, 76 cents; 25-25.9 degrees, 78 cents, with 2 cents added for each degree upward to 40 and over at $1.08: Carter Oil Co., Magnolia Petroleum Co., Pure Oil Co., Rock Island Refining Co., Shell Petroleum Corp., Sinclair Prairie Oil Marketing Co., Skelly Oil Co. and Wilcox Oil & Gas Co. All others begin their schedule at below 29 degrees, 84 cents, excepting Phiitex Oil Co., which begins with below 31 degrees at 84 cents.

Column 1—Effective September 29, The Texas Co. in Oklahoma; Stanolind Crude Oil Purchasing Co. in Kansas and Oklahoma; Anderson & Prichard, Inc., in Oklahoma; Bell Oil & Gas Co. in Oklahoma; Carter Oil Co. in Oklahoma and Kansas; Deep Rock Oil Co. in Oklahoma; Derby Oil Co. in Kansas; Globe Refining Co. in Oklahoma; Golden Rule Refining Co. in Kansas; Gypsy Oil Co. in Oklahoma and Kansas; Kanotex Refining Co. in Kansas; Magnolia Petroleum Co. in Oklahoma; Mid-Continent Petroleum Corp. in Oklahoma; National Refining Co. in Kansas and Oklahoma; Shell Petroleum Corp in Kansas and Oklahoma; Sinclair Prairie Oil Marketing Co. in Kansas and Oklahoma; The Texas Co. in Oklahoma; Tide Water Oil Co. in Oklahoma; Vickers Refining Co. in Kansas; Continental Oil Co. in Kansas and Oklahoma; Empire Pipe Line Co. in Oklahoma and Kansas; Phiitex Oil Co. in Kansas and Oklahoma; Pure Oil Co. in Oklahoma; Skelly Oil Co. in Kansas. Effective September 29, by White Eagle Oil Corp. in Kansas; on October 1 by Barnsdall Refineries, Inc., in Oklahoma.

Column 2—Effective September 29, by the Texas Co., Stanolind Crude Oil Purchasing Co., Humble Oil & Refining Co., Sinclair Prairie Oil Marketing Co., Gulf Pipe Line Co., Magnolia Petroleum Co., Bell Oil & Gas Co., Continental Oil Co. Effective September 29 in the Van Pool, Van Zandt County, the Pure Oil Co. posted below 29 degrees, 84 cents, with 2 cents added for each degree up to 40 and over at $1.08.

Column 3—Effective September 29 by the Texas Co., Magnolia Petroleum Co., Gulf Refining Co. Effective September 29, Stanolind Oil & Gas Co. in Pine Island, Louisiana, and Marion County, Texas, posted below 25 degrees, 63 cents, with 2 cents added for each degree up to 40 and over at 95 cents. For Standard Oil Co. of Louisiana's prices see Columns 10 to 16, inclusive.

Column 4—Effective September 29 by the Texas Co., Humble Oil & Refining Co., Magnolia Petroleum Co., Sinclair Prairie Oil Marketing Co. and H. F. Wilcox Oil & Gas Co. On same day Phiitex Oil Co. posted below 31 degrees, 71 cents, with 2 cents added for each degree up to 40 and over at 91 cents.

Column 5—Effective September 29 by the Texas Co., Humble Oil & Refining Co., Gulf Pipe Line Co., Magnolia Petroleum Co., Wilcox Oil & Gas Co., Continental Oil Co. On same day, Phiitex Oil Co. posted below 31 degrees, 61 cents, with 2 cents added for each degree upward to 40 and over at 81 cents.

Column 6—Effective September 29 by the Humble Oil & Refining Co. and Tide Water Oil Co., and on September 30 by the Texas Co. which on September 29 had posted a schedule of $1.07 to $1.12, with a 1-cent spread on each degree.

Column 7—Effective September 29 by the Stanolind Oil & Gas Co.

Column 8—Effective September 29 by the Humble Oil & Refining Co., Gulf Pipe Line Co., Shell Petroleum Corp., Pure Oil Co., Sinclair Prairie Oil Marketing Co. On October 2, Magnolia Petroleum Co. posted Lockport, Louisiana: 20-20.9 degrees, 84 cents, with 2 cents added for each degree upward to 34 and over at $1.12, and in Cameron Meadows and Iowa, Louisiana: Below 20 degrees, 72 cents with 2 cents added for each degree up to 34 and over at $1.02. These prices were 2 cents higher on each degree than Magnolia prices posted on September 29. Effective September 29, Shell Petroleum Corp. posted in Iowa, Louisiana, district: Below 20 degrees, 70 cents, with 2 cents added for each degree upward to 34 degrees and over at $1.00; and in Black Bayou and White Castle, Louisiana: Below 20 degrees, 80 cents, with 2 cents added for each degree upward to 34 degrees and over at $1.10.

Column 9—Effective September 30, the Texas Co. (On September 29, the Texas Co. had posted a schedule 2 cents lower on each degree, but changed it on September 30.)

Columns 10, 11, 12, 13, 14, 15, 16—Effective September 29, by the Standard Oil Co. of Louisiana and Louisiana Oil Refining Co.

Column 17—Effective September 29, by the Louisiana Oil Refining Co.

(California Crude Oil Prices on Page 30)

Crude Oil Prices

Oklahoma, Kansas, North Central and East Central Texas

East Texas	$1.00
Stratman, Kans. (Sept. 29, 1933)	1.08
Corsicana (heavy) (June 17, 1933)*	.30
Other fields	(See gravity table)

Note—In East Texas, effective September 29, 1933, by Texas Co., Stanolind Crude Oil Purchasing Co., Humble Oil & Refining Co., Shell Petroleum Corp., Gulf Pipe Line Co., Tide Water Oil Co., Sinclair Prairie Oil Marketing Co., Magnolia Petroleum Co., Sun Oil Co., Panola Pipe Line Co., and Empire Oil & Refining Co.
*Magnolia Petroleum Co.

West Texas

Crane, Upton, Crockett, Howard, Glasscock, Mitchell (Sept. 29, 1933)	$.75
Ector, Winkler and Pecos Counties and Lea County, New Mexico (Sept. 29, 1933)	.70
Pecos County, Yates shallow pool (Sept. 29, 1933)*	.65
Jones and Fisher Counties	See gravity table.

Note—Effective September 29, 1933, by Humble Oil & Refining Co., Texas Co., Gulf Pipe Line Co., Shell Petroleum Corp., Magnolia Petroleum Co., and by Stanolind Oil & Gas Co. in Winkler County, Texas.
*Shell Petroleum Corp.

Gulf Coast

Grade A and Grade B specifications discontinued by leading buyers	(See gravity table)
Tomball (see note)*	$1.15
Livingston (Sept. 29, 1933)†	1.09
Greta (Sept. 29, 1933)	.85
Refugio, light	(See gravity table)
Refugio, heavy (Sept. 29, 1933)‡	.85
Markham and High Island	(See Gulf Coast gravity table)
Conroe	(See Conroe gravity table)

Note—Tomball, effective September 29, by Humble Oil & Refining Co., and October 2 by Magnolia Petroleum Co., and November 10 by Stanolind Oil & Gas Co.
*Greta posted by Texas Co. †Shell Petroleum Corp. ‡Refugio heavy, by Humble Oil & Refining Co.

South Central and Southwest Texas

(See note below table)

Darst Creek	.87
Mirando	.80
Luling (Sept. 29, 1933)	.75
Pettus	1.05
Salt Flat	.87
Lytton Springs (Sept. 29, 1933)	.95
Duval County (Sept. 29, 1933)	.80
Saxet	.95

Note—Effective on September 29 by Humble Oil & Refining Co. in Darst Creek, Mirando, Pettus, Salt Flat and Saxet. Effective September 29 in Darst Creek by Gulf Pipe Line Co. and Texas Co. Effective October 2 by Magnolia Petroleum Co. Effective in Pettus and Salt Flat on September 29 by Humble Oil & Refining Co. and Gulf Pipe Line Co. Luling and Lytton Springs by Magnolia Petroleum Co. Duval County by Texas Co. Saxet, effective September 29, by Humble Oil & Refining Co. and Texas Co. Effective September 29 in Salt Flat by Shell Petroleum Corp.

(Continued on Page 30)

TANK WAGON MARKETS

Quotations for gasoline and kerosene in United States, as furnished by the larger marketing concerns, include taxes

December 19, 1933

Taxes

The gasoline quotations given in the following tables include the 1½-cent Federal tax effective June 17, 1933, as well as state, county and city taxes. The gasoline quoted is the regular or standard grade. In most marketing areas a third or competitive grade is available at 1 or more cents per gallon under the service station price for the regular grade. Ethyl Gasolines are sold 2 cents above the service station price for the regular grade.

Southern District

STANDARD OIL CO. (KENTUCKY)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax	Kero. tank wagon
Atlanta, Ga.	21.0	21.0	7.5	14.0
Augusta	21.5	21.5	7.5	14.0
Macon	22.0	22.0	7.5	14.0
Savannah	22.0	22.0	7.5	14.0
Birm'ham, Ala.	24 0	24 0	8.5	13 0
Mobile	23.0	23.0	8.5	12.5
Montgomery	22.5	22.5	8.5	14.5
Jackson, Miss.	22.0	22.0	7.5	13.0
Vicksburg	21.5	21.5	7.5	13.0
Jack'ville, Fla.	22.0	22.0	8.5	12.5
Miami	22.0	22.0	8.5	13.5
Pensacola	23.0	23.0	8.5	13.5
Tampa	22.0	22.0	8.5	12.5
Lexington, Ky.	20.5	20.5	6.5	11.0
Covington	20.0	20.0	6.5	11.0
Louisville	20 0	20.0	6.5	11.0
Paducah	20.5	20.5	6.5	10.0

In addition to the state tax of 4 cents on gasoline, Montgomery has city and county tax of 3 cents on gasoline and one-half cent on kerosene. Kerosene prices in Georgia and Mississippi include 1-cent state tax. In Florida, an inspection fee of 0.125 cent; in Alabama, an inspection fee of one-half cent on kerosene and one-fourth cent on gasoline. To Pensacola, Mobile and Birmingham state taxes on gasoline add 1-cent city tax.

Southwestern District

MAGNOLIA PETROLEUM CO.

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax	Kero. tank wagon
Dallas, Tex.	16.5	19.5	5.5	8.5
Fort Worth	16.5	19.5	5.5	8.5
Houston	16.5	18.5	5.5	8.5
San Antonio	16.5	19.5	5.5	8.5
El Paso	17.0	20.0	5.5	11.0
Texarkana	*15.0	15.0	5.5	9.0
Muskogee	16.0	18.5	5.5	8.5
Okla. City	16.0	18.5	5.5	8.5
Tulsa	16.0	18.5	5.5	8.5
Ft. Smith, Ark.	*17.9	17.9	5.5	9 0
Little Rock	*20.4	20 4	7.5	9.0

*Less 3 cents to dealers.

Standard Oil Co. (Indiana)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax	Kero. tank wagon
Chicago	17.8	17.8	4.5	9.7
Decatur, Ill.	18.2	18.2	4.5	10.2
E. St. Louis	17.5	16.7	4.5	9.5
Joliet	18.2	18.2	4.5	10.2
Peoria	18.2	18.2	4.5	10.2
Quincy	18.0	18.0	4.5	10.0
Davenport, Ia.	18 1	18.1	4.5	10.1
Des Moines	18 1	18.1	4.5	8.0
Mason City	18.1	18.1	4.5	10.1
Sioux City	17.7	17.7	4.5	9.7
Duluth, Minn.	18.7	18.7	4.5	10.4
Mankato	18.3	18.3	4.5	10.3
Minneapolis	18.4	18.4	4.5	10.4
LaCrosse, Wis.	19.8	19.8	5.3	10.8
Green Bay	19.2	19.2	5.5	10 2
Milwaukee	18.7	18.7	5.5	9.7
Madison	18.9	18.9	5.5	9.9
Detroit, Mich.	18.0	18.0	4.5	10.5
Grand Rapids	18.2	18.2	4.5	10.2
Saginaw	18.5	18.5	4.5	10.5
Evansville, Ind.	16.0	16.0	5.5	10.0
Indianapolis	19.2	19.2	5.5	10.2
South Bend	19.5	19.5	5.5	10.5
Fargo N. Dak.	20.1	20.1	4.5	12.1
Huron, S. Dak.	20.4	20.4	5.5	11.4
Sioux Falls	19.9	19.9	5.5	10.9
K. C., Mo.	17.2	17.2	4.5	8.2
Springfield	17.1	17.1	4 5	9.1
St. Louis	16.2	16.2	4.0	8.7
St. Joseph	16.8	16.8	4 5	8.3
Wichita, Kans.	16.1	16.1	4 5	8.1
Bartlesville, Ok.	16.5	19.0	5.5	8.5

*State tax 2 cents, 1-cent city tax and 1½-cent Federal tax.

Effective June 1, 1933—Discounts off tank wagon price to consumers on 500 gallons or more per month in territory outside of Chicago metropolitan area: 2 cents on Ethyl and Red Crown gasolines, and 1 cent on Stanolind gasoline. One-half cent additional discount in Chicago division.

Effective July 1, 1933—Discounts on resellers authorized agent's agreement made off the service station price throughout the territory as follows: 2.5 cents on Red Crown Ethyl and Standard Red Crown gasolines, and 1.5 cents on Stanolind gasoline. Half of reduction from normal service station price shall be absorbed by resellers up to maximum of 1 cent on all grades.

Stanolex Furnace Oil in Chicago

Effective September 13, 1933, prices f.o.b. Chicago, tank wagon prices: No. 1 (35-40 lt. stw. zero), under 100 gallons, 8¼ cents; No. 2 (30-34 stw. zero), 7¾ cents; No. 3 (32-26 zero), 7¼ cents; No. 4 under 300 gallons (12-16 zero), 6¼ cents; viscosity of No. 4, 90-115 at 100° F.; No. 5 under 300 gallons, 6 cents; for deliveries of 100 gallons or more deduct 1 cent.

Naphtha

	Tank wagon
Oleum spirits	12.9
V.M.&P. naphtha	15.9
Cleaners' naphtha	15.0
Stanisol	15.9

Prices f.o.b. Chicago, September 13, 1933. Each of above prices subject to discount of 1 cent per gallon for 150-gallon lots if covered by contracts.

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax	Kero. tank wagon
Atl'tic City, N.J.	19.2	15.7	4.5	10.0
Newark	18.5	18.0	4.5	9.5
Annapolis, Md.	19.8	19.3	5.5	10.0
Baltimore	19.3	18.8	5.5	9.0
Cumberland	20.3	20.3	5.5	12.7
Wash'g'n, D. C.	17.5	15.0	3.5	11.0
Danville, Va.	21.9	21.4	6.5	13.9
Norfolk	20.4	18.8	6.5	11.2
Petersburg	21.2	20.7	6.5	11.4
Richmond	20.8	20.3	6.5	11.7
Roanoke	22.0	21.5	6.5	13.9
Charle'n, W.Va.	20.2	19.7	5.5	13.6
Parkersburg	19.5	19.0	5.5	11.2
Wheeling	20.2	19.0	5.5	12.2
Charlotte, N. C.	23.6	22.1	7.5	13.5
Hickory	23.9	23.4	7.5	13.7
Mt. Airy	23.9	23.4	7.5	13.8
Raleigh	23.4	23.9	7.5	13.1
Salisbury	23.7	21.5	7.5	13.0
Charleston, S.C.	21.4	20.9	7.5	11.3
Columbia	23.2	22.7	7.5	13.2
Spartanburg	23.6	23.1	7.5	13.5

Note—Dealer contracts for gasoline are written at 2½ cents over the posted tank car price. Kerosene 1 cent off tank wagon for 25 gallons or more under contract except New Jersey and Baltimore, Md.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax	Kero. tank wagon
N. Orleans, La.	20.3	20.0	*7.5	†12.0
Baton Rouge	20.0	19.5	6.5	†13.0
Alexandria	20.9	17 5	*7.5	†10 0
Lafayette	21.1	20.6	*7.5	†12.0
Lake Charles	21.0	20.5	*7.5	†12.0
Shreveport	18.8	17.0	6.5	†12.0
Knoxville, Tenn.	24.2	22.2	8.5	13.5
Memphis	22.6	21.5	8.5	9.5
Chattanooga	24.0	22.9	8.5	13.0
Nashville	23.5	21.5	8.5	11.0
Bristol	24.1	23.5	8.5	14.0

*Includes city tax of 1 cent. †Louisiana kerosene prices include 1-cent state tax.

Commercial consumers for tank wagon delivery pay following amounts over tank car price, basis yearly deliveries:

1,000 to 75,000 gallons	2.5
75,000 to 300,000 gallons	1.5
Over 300,000 gallons	1.0

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA*

	Gasoline: Tank truck†	Gasoline: Posted retail	Gasoline: Incl'ds tax	Kero. tank wagon
San Francisco	15.0	18.0	4.5	13.5
Los Angeles	14.5	17.5	4.5	12.5
Fresno, Calif.	16.0	19.0	4.5	14.0
Phoenix, Ariz.	18.5	21.5	6.5	‡16.0
Reno, Nev.	18.5	21.5	5.5	15.5
Portland, Ore.	19.0	22.0	6.5	13.5
Seattle, Wash.	19.0	22.0	6.5	13.5
Tacoma	19.0	22.0	6.5	13.5
Spokane	21.5	24.5	6.5	13.0

*Retail prices posted by Standard Stations, Inc., a subsidiary.

†Above prices are at company's plant or depots as company does not operate stations. A 4-cent per gallon discount is given dealers and customers taking tank wagon lots except in Phoenix where the discount is 1 cent. ‡Includes 5-cent state tax.

New York and Part of New England

STANDARD OIL CO. OF NEW YORK

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax	Kero. tank wagon
Ibany, N. Y.	17.1	18.1	4.5	9.5
New York	17.0	18.0	4.5	8.5
Buffalo	17.7	18.7	4.5	9.5
Rochester	16.5	17.5	4.5	9.5
Syracuse	17.6	18.6	4.5	9.0
Boston, Mass.	17.0	18.0	4.5	8.0
Augusta, Me.	18.5	19.5	5.5	9.0
Manch't'r, N.H.	19.2	20.2	5.5	8.5
Burlington, Vt.	19.8	20.8	5.5	9.0

Pennsylvania, Delaware and Part of New England

ATLANTIC REFINING CO.

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax	Kero. tank wagon
Philadelphia, Pa.	12.5	13.0	4.5	10.0
Pittsburgh	17.0	18.0	4.5	10.0
Allentown	17.0	18.0	4.5	10.0
Erie	17.0	18.0	4.5	10.0
Scranton	17.0	18.0	4.5	10.0
Altoona	17.0	18.0	4.5	10.0
Dover, Del.	17.0	18.0	4.5	10.0
Wilmington	13.5	14.0	4.5	10.0
Boston, Mass.	17.0	18.0	4.5	8.5
Springfield	17.6	18.6	4.5	8.5
Worcester	17.5	18.5	4.5	8.5
Hartford, Conn.	16.4	17.4	3.5	8.5
New Haven	16.2	17.2	3.5	8.5
Providence, R.I.	16.0	17.0	3.5	8.5

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax	Kero. tank wagon
Denver, Colo.	19.0	21.5	5.5	12.5
Pueblo	17.0	19.5	5.5	13.0
Grand Junction	21.0	23.5	5.5	15.0
Casper, Wyo.	19.5	22.0	5.5	11.0
Cheyenne	18.0	20.5	5.5	12.0
Butte, Mont.	21.0	23.5	5.5	17.5
Billings	23.0	25.5	6.5	16.5
Helena	23.0	25.5	6.5	17.5
Great Falls	22.5	25.0	6.5	17.5
Salt Lake, Utah	22.0	24.5	5.5	16.0
Boise, Idaho	23.0	25.5	6.5	18.0
Twin Falls	23.0	25.5	6.5	18.0
Albu'que, N. M.	19.5	22.5	*7.5	13.0

*One-cent city tax.

Effective June 1, 1933, dealers and lease and license accounts will receive 2½ cents discount on regular gasoline in Montana, Colorado, Wyoming, Utah and Idaho.

STANDARD OIL CO. OF OHIO

Ohio

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax	Kero. tank wagon
Ohio points	17.0	18.0	5.5	*12.5

*Includes state tax of 1 cent, effective July 22.

Canada*

IMPERIAL OIL, LTD.

Imperial 3-Star Gasoline

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax	Kero. tank wagon
Hamilton, Ont.†	26.5	27.5	6.0	17.5
Toronto, Ont.†	26.5	27.5	6.0	17.5
Brandon, Man.*	31.0	34.5	7.0	22.5
Winnipeg, Man.	28.0	31.5	7.0	19.5
Regina, Sask.	31.0	35.0	6.0	22.5
Saskatoon, Sask.	33.0	37.0	6.0	25.5
Edmonton, Alta.	31.5	35.5	6.0	24.5
Calgary, Alta.	28.0	32.0	6.0	21.0
Vanc'ver, B.C.†	30.0	31.0	7.0	24.0
Montreal, Que.	24.0	27.0	6.0	17.0
St. Johns, N.B.	26.5	30.5	7.0	21.0
Halifax, N. S.	25.5	29.5	6.0	21.0

*Imperial gallon used in Canada. †Dealer discount posted tank wagon on gasoline in Ontario and British Columbia subject to dealer's discount of 3 cents per gallon.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax	Kero. tank wagon
Omaha	18.8	19.8	5.5	10.8
McCook	19.0	19.0	5.5	9.0
Norfolk	19.3	20.3	6.5	11.3
N. Platte	20.3	21.3	6.5	10.5
Scottsbluff	19.8	19.8	5.5	11.0

Note: Discount to dealers and AAA commissions. From service station price: Red Crown Ethyl and Standard Red Crown gasolines, 2 cents. Reliance (third grade) gasoline, 3 cents. Rentals under lease and agents agreement, one-half cent per gallon additional.

Discount to consumers under contract (large consumers under contracts and governmental units): On tank wagon deliveries of gasoline on monthly purchases of 500 gallons, or yearly purchases of 6,000 gallons, from the service station price: Red Crown Ethyl and Standard Red Crown Gasoline, 2 cents per gallon; Reliance (third brand) gasoline, 1 cent per gallon.

Retail Price Changes

Regular-Grade Gasoline and Kerosene

Atlantic Refining Co. December 11 reduced the tank wagon and service station prices of gasoline in Philadelphia 2 cents. On the same date it reduced the tank wagon price of gasoline 3 cents and the service station price 2½ cents in Wilmington, Del.

Standard Oil Co. (Kentucky) December 6 advanced the tank wagon and service station prices of gasoline in Paducah 1 cent and reduced the tank wagon price of kerosene 1 cent. December 8 reduced the tank wagon price of kerosene in Birmingham 1½ cents. December 2 in Montgomery reduced the tank wagon and service station price of gasoline 1 cent, December 8 reduced gasoline prices one-half cent, December 12 reduced gasoline prices one-half cent, December 13 reduced gasoline prices one-half cent, to 22½ cents.

Standard Oil Co. of New York November 22 reduced the tank wagon and service station prices of gasoline 1 cent in Rochester.

Standard Oil Co. of Louisiana December 6 reduced the service station price of gasoline in Alexandria 2.9 cents.

Proposed Code for Unfired Pressure Vessels Finished

Three years' work by a group of 10 men representing the American Petroleum Institute and the American Society of Mechanical Engineers has resulted in the completion of four sections of a proposed code for unfired pressure vessels which will be submitted as soon as possible to the two sponsoring organizations for approval. The proposed code, the final one of nine drafts prepared, was circulated for criticism and analysis among representatives of the refining branch of the petroleum industry and manufacturers of refining equipment.

The joint American Petroleum Institute-American Society of Mechanical Engineers committee was set up in 1931 to prepare rules for safe practice in the design, construction, inspection and repair of unfired pressure vessels for petroleum liquids and gases.

Members of the joint committee are: Walter Samans, Atlantic Refining Co., chairman; R. P. Anderson, American Petroleum Institute, secretary; A. J. Ely, Standard Oil Development Co.; K. V. King, Standard Oil Co. of California; P. D. McElfish, alternate; R. C. Powell, The Texas Co.; T. D. Tifft, Sinclair Refining Co., for the Institute; and E. H. Brown, A. O. Smith Corp.; T. McLean Jasper, alternate; R. E. Cecil, William B. Scaife & Sons Co.; E. R. Fish, Hartford Steam Boiler Inspection & Insurance Co.; D. S. Jacobus, Babcock & Wilcox Co.; and James Partington, American Locomotive Co., for the American Society of Mechanical Engineers.

In a preface prepared for the code it is noted that the code as presented has been written for vessels constructed of carbon steel as the material most widely employed. It is pointed out that "there is no intent to discourage the use of alloy steels and other special materials that have been developed for the most severe service, and no doubt the codification of rules for additional materials will later receive the attention of the committee." The committee invites constructive suggestions in the realization that revisions will be necessary from time to time to keep abreast of developments.

NEWS FOR SALES DEPARTMENTS

Gasoline Retailers Select Date for First Convention

CHIGAGO, Dec. 18.—The National Association of Gasoline Retailers will hold its first annual convention in the LaSalle Hotel, Chicago, with an expected attendance of gasoline dealers from throughout the United States, January 9 and 10, 1934. Headquarters for the organization has been established at 205 West Wacker Drive, Chicago. The organization has been formed by the Chicago Service Station Operators Association and it has created local and regional affiliates in various parts of the country. The convention is stated to be for the dual purpose of achieving permanent organization and solving problems of the industry's retailers.

Arrangements have been made by the convention committee, headed by E. C. Shanks, 614 Manhattan Building, Milwaukee, Wis., for an all-expense convention, to provide meals and lodging from the opening to the final dinner on the second day. Sectional conferences and state associations have been allotted a maximum of six delegates and six alternates; county and local associations have been allotted four delegates and four alternates.

Transatlantic Flight Uses 727 Gallons of Motor Fuel

ST. LOUIS, Mo., Dec. 16.—Col. Charles A. Lindbergh, on his recent 1,875-mile transatlantic flight with Mrs. Lindbergh from Bathurst, West Africa, to Natal, Brazil, consumed approximately 727 gallons of gasoline, according to a cablegram received today by Maj. James H. Doolittle, noted flyer and manager of the aviation department of Shell Petroleum Corp., this city, from the London offices of the company.

Major Doolittle was informed that Shell aviation gasoline was used.

SINCLAIR SALES UP

Sinclair Refining Co. marketing subsidiary of Consolidated Oil Corp., reports for the first eight months of 1933, an increase in sales of all products of 300,000,000 gallons over the corresponding period in 1932. An important factor in this gain is the company's increased lubricating oil sales.

Sales of all products in November this year were 14 per cent greater than the corresponding month last year.

Along with the general pickup in business activity, the sales of industrial oils have also increased substantially. In November these sales by Sinclair recorded an increase of 57.53 per cent over the corresponding month last year.

GOVERNMENT WINS FIRST SUIT

BROOKLYN, N. Y., Dec. 16.—The Government won its first criminal prosecution for violation of an NRA code when proprietors of Hercules Gasoline Filling Stations, Inc., entered a guilty plea in Brooklyn Federal Court. The corporation's heads, David Lind and Moe Levine, were fined $100 each by Federal Judge Clarence G. Galston, who also assessed a $200 fine against their corporation. The indictment, returned November 16, was the first returned by a grand jury anywhere in the country for NRA code violation. It charged nine violations of the retail gasoline code.

PROPOSE 4-CENT TAX

The Minnesota legislature is considering a bill which will increase the state gasoline tax from 3 cents to 4 cents as a means of increasing the revenue of the highway department.

Marketers of Petroleum Products Form National Association and Lay Plans

CHICAGO, Dec. 18.—The National Oil Marketers Association was organized at a meeting in the Stevens Hotel last Tuesday and the following officers were elected: President, E. V. Weber, Eureka Oil Co., Reading, Ohio; first vice president, Clarence Bauers, Continental Co. (an independent jobbing concern), Louisville, Ky.; second vice president, N. C. Beim, W. H. Barber Co., Minneapolis, Minn.; secretary-treasurer, Paul E. Hadlick, National Press Building, Washington, D. C.

Directors were elected for seven divisions into which the activities of the association will fall. The directors elected at the meeting to serve until a spring meeting is held follow:

Oil Jobbers—R. J. Coughlin, Westland Oil Co., Minot, N. Dak.; W. D. Hudson, Apex Petroleum Co., Nashville, Tenn.; J. E. Fenn, Orange State Oil Co., Miami, Fla.; Clarence Bauers, Continental Oil Co., Louisville, Ky.; E. V. Weber, Eureka Oil Co., Reading, Ohio; Charles Foreman, Mid Western Petroleum Co., Indianapolis, Ind.; William Vandenberg, Vandenberg Brothers Oil Co., Holland, Mich.; Charles Rosenthal, Apex Motor Fuel Co., Chicago; Harry Rhode, Rhode Oil Co., West Allis, Wis.; N. C. Beim, W. H. Barber Co., Minneapolis, Minn.; J. M. Cushman, International Oil Co., Des Moines, Iowa; Fred Bergfors, Quincy Oil Co., Quincy, Mass.; and C. E. Lewis, Hillsdale Petroleum Co., Hillsdale, Mich. Seven to be added.

Brokers and Carload Marketers—Paul Boswell, Boswell Oil Co., Cincinnati, Ohio; Carl Beroth, Acme Petroleum Co., Chicago; and L. C. Hickox, Paramount Petroleum Co., Kansas City, Mo. One to be added.

Refiners—B. L. Majewski, Deep Rock Oil Co., Chicago; and Paul Blazer, Ashland Refining Co., Ashland, Ky. Two to be added.

Dealers—Edward W. Kruse, 4445 Sheridan Road, Chicago. Four to be added.

Burning Oil Distributors—F. J. Moore, Seneca Petroleum Co., Chicago; and W. W. Vandever, Allied Oil Co., Cleveland, Ohio. One to be added.

Lubricating Oil Compounders and Wholesale Lubricating Oil Distributors—T. A. Telfer, Calumet Refining Co., Chicago; and Jack Nourse, Nourse Oil Co., Kansas City, Mo.

Grease Compounders—Guy Peters, Oilkraft, Inc., Cincinnati, Ohio; and J. R. Battenfeld, Battenfeld Grease & Oil Co., Kansas City, Mo.

Annual dues were fixed as follows: Refiners, $100 a year; lubricating oil compounders, $50; oil jobbers and burning oil distributors, not less than $25 and not more than $50, depending on gallonage; carload marketers, grease manufacturers and wholesale lubricating oil distributors, $25. The rate for dealers has not been worked out. If oil jobbers and burning oil distributors handle less than 1,000,000 gallons annually, they pay the minimum dues, and if they sell more than 2,000,000 gallons, they pay the maximum. Between 1,000,000 and 2,000,000 gallons, dues are on a sliding scale.

Mr. Majewski and Mr. Hadlick gave talks emphasizing the need for the new organization. Resolutions were adopted asking that the association be represented on the Planning and Co-ordination Committee by Mr. Majewski and on the Petroleum Administrative Board's marketing committee by Mr. Hadlick.

OIL BURNER SHOW

An unusually large interest on the part of accessory and fuel oil companies in the forthcoming eleventh national oil burner show, to be held in Philadelphia March 5 to 9, is reported by Harry F. Tapp, executive secretary of the American Oil Burner Association. While general sale of space did not go into effect until December 12, sufficient inquiries and standing orders for space were at hand from the accessory and fuel oil groups to indicate that "the exhibits will be more varied and representative than at any previous show."

PROBE ST. LOUIS STRIKE

ST. LOUIS, Mo., Dec. 15.—An investigation of differences between eight major oil companies and their employes here is being completed by a representative of the labor policy board of the Petroleum Administration, and definite mediation efforts are scheduled to begin soon.

Employes of the companies recently organized a union, struck for recognition, but returned to work pending mediation.

Dr. George W. Stocking, representative of the national board, has been in St. Louis for a week.

OPPOSE OIL AGREEMENT

The Independent Oil Companies Alliance of America has telegraphed Secretary of the Interior Ickes protesting possible confirmation of the proposal submitted by major companies as an alternative to price fixing by the oil administration.

TRUCE IN PRICE WAR

HOUSTON, Tex., Dec. 16.—A temporary truce has been agreed upon in the Houston gasoline price war which has flared up intermittently in the past several months and problems confronting independent jobbers and retailers here have been placed before LaVergne F. Guinn, special assistant United States attorney general, who is in charge of prosecution of violations of the marketing division of the oil code.

Pending study of the conditions by Mr. Guinn, the Harris County Independent Oil Jobbers Association will maintain the 15½-cent price recently adopted. Also, those independents who lately have been selling below that posting have agreed to advance their prices to the 15½-cent level for the time being.

A series of meetings have been held at the plant of the Gaylor Oil Co. here the last several days by the Harris County association to devise means of combating the sale of low-priced gasoline on the market here. Members of the association have expressed reluctance against meeting the price as they claim any price below 15½ cents at this time will not allow them a reasonable profit under the code.

MOTOR LICENSE DATES

EDMONTON, Alberta, Dec. 16.—The Saskatchewan government recently announced that the auto license year in that province would start with March 1 instead of January 1. The Alberta government is considering adoption of the same date.

American Fuel Oil Taken to Base by British Ship

LOS ANGELES, Calif., Dec. 16.—Another load of American naval fuel oil has been dispatched to the Cavite (Philippine Island) base in a British flag ship. The British tanker Tamaha departed with 50,000 bbls. of fuel oil for discharge at Cavite, according to United States Navy records.

The cargo was loaded by General Petroleum Corp., on account of Socony-Vacuum, holders of the contract with the Navy. Dispatch of the oil in a British tanker was despite an unofficial request of the Navy asking that American bottoms be employed when possible.

With the 50,000 bbls. en route to the American Navy base the total contract of 300,000 bbls. has been reduced to a remainder about 55,000 bbls. The American tanker Mojave left here late in October with one consignment, while two other deliveries were made by British flag ships.

October Imports of Fuel Oil Show Sharp Increase

Fuel oil imports, which totaled 818,026 bbls. in September, increased by 169,097 bbls. the next month, when the imports of this product aggregated 987,123 bbls. In both September and October fuel oil was the principal refinery product imported.

The following statistics of imports and exports of petroleum and its products for October, 1933, are furnished by the U. S. Department of Commerce:

EXPORTS

(Barrels)	
Petroleum, crude	3,888,287
Natural gasoline	131,957
Gasoline, naphtha and other finished light products, in bulk	2,335,884
Gasoline, naphtha, and other finished light products, in containers	118,824
Illuminating oil, in bulk	810,304
Illuminating oil, in containers	111,798
Gas oil and distillate fuel oil	994,663
Residual fuel oil	627,030
Lubricating oil, red and pale	476,587
Lubricating oil, black	40,555
Lubricating oil, cylinder	314,789
(Gallons)	
Mineral spirits	316,459
Insulating or transformer oils	72,928
Light lubricating oils in small packages	8,272
(Pounds)	
Lubricating greases	7,112,670
Paraffin wax, unrefined	9,227,861
Paraffin wax, refined	11,163,647
(Tons)	
Petroleum asphalt	23,069
Petroleum coke	13,815

IMPORTS

(Barrels)	
Petroleum, crude	1,757,792
Fuel oil, including topped petroleum	987,123
Unfinished distillates, n.e.s	0
Gas oil	0
Paraffin oil, not lubricating	595
Liquid derivatives of petroleum, n.e.s	0
Gasoline and other motor fuel	841
Finished light products, n.e.s	0
Naphtha, not motor fuel	0
Illuminating oil, kerosene	999
Lubricating oils, including paraffin oil	400
(Pounds)	
Paraffin and paraffin wax	3,099,353

NEW OIL JOBBER

HILLSBORO, N. C., Dec. 16.—Robertson Oil Co., with principal offices at Hillsboro, has filed a certificate of incorporation in the office of Stacey W. Wade, Secretary of State, at Raleigh, N. C., to engage in the business of buying, selling and distributing all kinds of oils, fuels, gasoline, kerosene, etc. Authorized capital stock, $50,000. The incorporators are C. H. Robertson, O. S. Robertson, Susan G. Robertson and T. E. Pope of Hillsboro.

NATURAL GASOLINE MANUFACTURE

Refiners Take About 89 Per Cent as Much Natural

Natural gasoline purchases during 1933 by refiners depending upon the Mid-Continent as a source of supply will be about 89 per cent of the volume purchased last year, according to an analysis of the Bureau of Mines latest report by the Western Petroleum Refiners Association. The actual purchases for the first 10 months of this year have been 11.8 per cent less, the largest volume decrease being among refiners located along the Gulf Coast and the largest percentage decrease is shown for the North Louisiana and Arkansas group.

Stocks of natural gasoline carried by the various groups show a marked reduction on November 1 of this year compared with the same date a year previous, the total this year being shown as 5,376,000 gallons and a year ago were 7,938,000 gallons. Equalizing the lesser consumption of refiners, natural gasoline plant operators show a reduction in output of 7.6 per cent for the period.

The Oklahoma City Field is the only one to report a substantial increase in output, and the West Texas group is the only other one to report any increase in yield. The balance of the Mid-Continent fields show a decline ranging from 2.5 per cent to 35.2 per cent.

MID-CONTINENT NATURAL GASOLINE STATISTICS
(Quantities in thousand gallons)

	First 10 mos. 1932	First 10 mos. 1933	Percentage change
Stocks at Plants, October 31			
Oklahoma	9,648	11,409	+18.2
Kansas	672	558	—17.0
Texas	7,258	5,420	—25.3
Louisiana	924	687	—25.6
Arkansas	254	149	—41.2
Total	18,756	18,223	—2.8
Production			
Oklahoma City	65,100	73,800	+13.4
Osage County	41,600	34,500	—17.1
Seminole	111,100	81,600	—26.6
Rest of State	102,100	107,200	+5.0
Total Okla.	319,900	297,100	—7.1
Kansas total	20,400	18,600	—8.8
Panhandle	151,700	142,600	—6.0
North Texas	25,600	16,600	—35.2
W. Central Texas	72,000	70,200	—2.5
Rest of State	60,700	62,900	+3.6
Total Texas	310,000	292,300	—5.7
Louisiana total	39,800	31,700	—20.4
Arkansas total	16,100	12,700	—21.1
Total	706,200	652,400	—7.6
Shipments			
Oklahoma	319,037	291,402	—8.7
Kansas	20,156	18,452	—8.5
Texas	308,747	293,268	—5.0
Louisiana	40,114	31,728	—20.9
Arkansas	16,048	12,715	—20.8
Total	704,102	647,565	—8.0
Stocks at Local Refineries, October 31			
Okla. and Kans.	882	1,260	+42.9
Inland Texas	252	378	+50.0
Coastal Texas	6,678	3,654	—45.3
N. La. and Ark.	126	84	—33.3
Coastal La.	none	none	...
Total	7,938	5,376	—32.3
Used by Local Refineries			
Okla. and Kans.	164,682	171,948	+4.4
Inland Texas	112,854	115,164	+2.0
Coastal Texas	115,710	91,896	—20.6
N. La. and Ark.	30,030	14,448	—51.9
Coastal La.	32,970	9,534	—71.1
Total	456,246	402,990	—11.7
Local Refinery Demand (Receipts)			
Okla. and Kans.	164,346	172,284	+4.8
Inland Texas	112,896	115,374	+2.2
Coastal Texas	110,922	86,352	—22.2
N. La. and Ark.	29,904	14,364	—52.0
Coastal La.	32,886	9,534	—71.0
Total	450,954	397,908	—11.8
Production in Excess of Local Demand			
Okla. and Kans.	175,954	143,416	—18.5
Texas	86,182	90,574	+5.1
La. and Ark.	*6,890	20,502	...
Total	255,246	254,492	—0.3

*Deficit.

Canada's First High-Pressure Gasoline Plant Placed in Routine Operation

Canada's first high pressure natural gasoline plant has been placed upon a routine operating schedule, having been completed in May and by this time is regularly processing 90,000,000 feet of Turner Valley gas daily. A description of this plant as given in the Imperial Oil Review, the house organ of the Imperial Oil Co., the parent company for the Royalite Co., owners of the plant, follows in part:

"When A. W. Dingman drilled his wells along Sheep Creek and erected his ambitious little absorption plant, he, to employ a stock phrase of the perfervid politician, 'builded better than he knew.'

"When the Royalite Oil Co. entered into the Dingman heritage and its absorption and compression plant rose, phoenix-like, from the veritable ashes of the Dingman venture, it seemed that the doxology had been pronounced on Turner Valley development, and that western Canada's 'freak' oil field would pursue the even tenor of its way along well defined lines until exhaustion wrote finis to its activities.

"But, when Royalite's No. 4 punctured the 'Madison' lime estimates had to be revised and prophecies rewritten.

"Royalite's No. 4 with its modest 3,185 feet of hole, was the precursor of 172 wells which penetrated a total depth of 138 miles into the earth's crust. Royalite's No. 4, with its 20,000,000 feet of gas a day and its 400 bbls. of naphtha, was the first fruits of the 400,000,000,000 feet of gas and the 6,000,000 bbls. of crude oil and naphtha which the Turner Valley has since contributed to Canada's nonmetallic production.

"The original Royalite plant seemed quite adequate to handle the low pressure gas from the existing wells and extract from it a modest percentage of gasoline, but when Royalite's No. 4 blew in, with a pressure to perhaps 2,000 pounds to the square inch, compressors were passe.

"It was only logical that the city of Calgary should be interested in the disposition of the natural gas being produced at her doors and arrangements were soon made to connect the field with the mains which carried domestic and industrial heat and power to this thriving center. The company then built an imposing plant which eliminated the noxious sulphur content from the gas and made it fit for domestic use.

"Until early in 1933 the gasoline recovered was through the use of separators only. The proration of production and other factors made a change in the method of recovering the gasoline necessary.

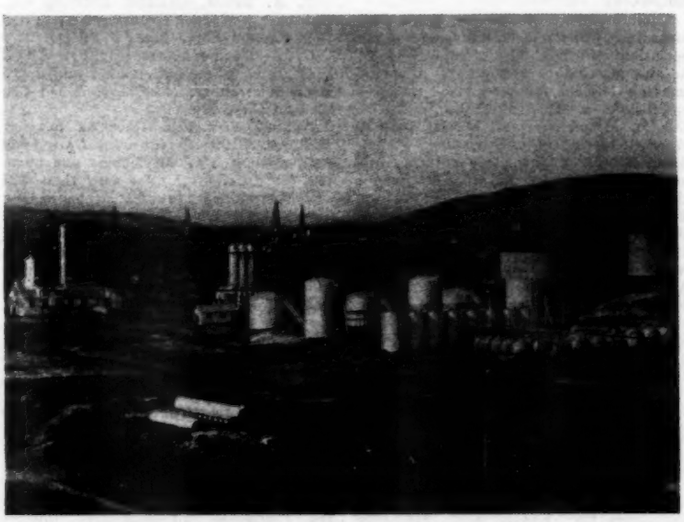
"The gases leaving the separators carried an appreciable percentage of naphtha.

"Again the industry proved itself equal to the changing conditions. A natural gasoline extracting plant was built to handle the residual gases and wring from them the ultimate drop of moisture. This plant is under the expert supervision of S. G. Coultis and C. W. Ward, men of long experience in the wayward tendencies of Turner Valley wells and thoroughly skilled in plant operation.

"In building this plant, the Royalite Oil Co. incorporated all that is newest and best in equipment and procedure, the operations being in accordance with elaborate formulas governing the separation of the various hydrocarbon components. The process, briefly and nontechnically, is as follows: Absorption oil is cycled through the absorbers in contact with the gas and then is passed through the distilling apparatus. In the absorbers the moisture in the gas (natural gasoline) is absorbed by the oil and in the distillation unit the natural gasoline is removed from the oil and transferred to storage tanks.

"This product must be treated for corrosion and blended with heavier petroleum constituents in order to make it usable and, due to its highly volatile nature, the quantity of natural gasoline which can be included in motor spirits is definitely limited.

"The plant was placed in operation during May of this year and results were gratifying from the start. At the present time, approximately 90,000,000 feet of gas is passing through the plant daily."



High pressure gasoline plant of the Royalite Co. in the Turner Valley Field

Lower Cost Ethyl Fluid Favors Use of Natural

Natural gasoline manufacturers anticipate increased sales of their product to refiners after the first of the year due to liberalizing the charges for Ethyl fluid by the Ethyl Gasoline Corp. on that date. A week ago that company announced that its royalty charge of .2 cent per gallon will be discontinued and the cost of the fluid itself will be reduced. This will induce refiners to increase their total yield of gasoline from each barrel of crude and the supposition is that the average endpoint of refinery production will be slightly higher as the result. In so doing, additional volatility will be needed on the front end of the distillation curve. Another factor which will operate to increase the refinery purchases of natural is the retarding of the practice of reforming in favor of buying more lead to produce the same octane value motor fuel. Reforming has been responsible for a large increase in the refinery production of recovery gasoline which in turn has made refiners independent of the natural market in many instances.

The extent of any change from the present will of course be dependent upon the relative cost of natural gasoline, the market value of refinery gasoline and the cost of the Ethyl fluid. The latter is definite but the other two factors are not. As gasoline prices advance it will pay to make a greater volume of gasoline per barrel of crude which favors natural gasoline. In turn, there is a limit which refiners will pay for natural, so the future of the natural market reverts back to the old problem on what the refinery market is going to do.

Residue Gas in Panhandle New Hazard to Airplanes

The large volume of gas being allowed to be dissipated into the air from some Panhandle natural gasoline plants as a result of the ruling of the Texas Railroad Commission several months ago presents a new problem to safety engineers.

Approximately 500,000,000 feet of gas is being allowed to escape into the air daily from natural gasoline plants located in the Panhandle area, and a recent report of the Department of Commerce issued from the Fort Worth offices states that under certain weather conditions there is a sufficient accumulation or concentration of the gas to represent a hazard to air pilots.

On quiet cold days engineers state that it is possible for the gas to form a thick blanket over the plants and that a prolongation of such weather conditions could produce a column of gas of sufficient concentration and height to cause a severe explosion if ignited by the exhaust.

It is also likely that the problem will become more provoking as new plants are completed in that area. The exact wording of a part of the bulletin issued by the department as a warning to airmen follows:

"It is possible that liberation of this gas into the atmosphere may create a condition which would result in an explosion caused by the exhaust of aircraft motors."

PLAN MICHIGAN PLANT

MUSKEGON, Mich., Dec. 18.—The Community Natural Gas Co., headed by J. P. McCloskey and Lee S. Miller with headquarters here, contemplates the building of a natural gasoline plant in the Central Michigan producing fields and has laid plans for supplying five small towns near the field with residue gas.

NEWS FOR PETROLEUM REFINERS

Cities Service Introduces New Lubrication Service

Cities Service is about to introduce a new method of lubrication at its various service stations, it was learned yesterday. As a matter of fact, the new system has already been installed at some of its stations. The new plan, which is called "individualized lubrication," overcomes certain faulty practices in the lubrication of automobiles and assures factory perfect greasing. The system, which is exclusive with Cities Service and was prepared with the co-operation of leading automotive engineers, will be installed in most of the company-operated stations and sold to 100 per cent dealers who request it.

The keystone of the entire plan is an individual chart covering each motorist's car. When a motorist brings his car into the station the attendant notes the make and model, takes a chart out of the file covering that car, notes the work to be done and places the chart on the car where it can be seen readily. On the diagram is shown every point to be greased and the type of lubricant to be used. The service man works from the chart—refers to it constantly—and can make no mistakes because the chart shows every single point to be lubricated. When the work is completed another service man takes the chart and goes over the entire car in order to be certain that no point is skipped. This chart then becomes the property of the customer and is both his receipt and assurance of a perfect lubrication job.

At the present time this unique system has been installed in the stations of the following Cities Service marketing organization: Crew Levick Co., Cities Service Refining Co., A. R. Newcomb Oil Co., Cities Service Oil companies of Wisconsin, Michigan and Ohio, and Cities Service Oil Co., Ltd., of Canada.

It is expected that in the near future the entire marketing organization in 38 states will offer "individualized lubrication" to the motoring public.

COMPLETE TEST RUN

The Henry H. Cross Co. has completed a test run on its new 1,300-bbl. cracking unit in its refinery located at Smackover, Ark. The plant operates on a 15-gravity oil to produce a 58-gravity 410-endpoint gasoline of 68 octane number. The fuel oil residuum contains less than 1 per cent b.s. and w. and is a commercial fuel of 5 to 6 gravity. The unit was designed by Ampco, Inc.

SIX PLANTS IN RECEIVERSHIP

LONGVIEW, Tex., Dec. 15.—Six East Texas refineries are operating under a receivership through the nonpayment of state and Federal gasoline taxes, according to Samuel Kimberlin, district supervisor for the state motor fuel division of the comptroller's department. The latest East Texas refinery to be placed in receivership is located at Kilgore. The state comptroller's department alleges the refinery owes $30,000 to the state in taxes and $19,000 to the Federal Government.

WANT MORE ASPHALT IMPORTED

WASHINGTON, D. C., Dec. 19.—Importers of asphalt desire an increase in the allowable into this country and met with the Petroleum Administrative Board here today. After discussing the situation they asked for an extension of the hearing until January 9 which was granted. There is considerable objection to making any increase in the allowable imports from domestic manufacturers.

Refiners in Rocky Mountain Area See Possible Local Shortage of Crude Oil

DENVER, Colo., Dec. 18.—Refiners in the Rocky Mountain states are confronted with the problem of maintaining an adequate crude supply as a result of the blanket orders issued by Administrator Harold L. Ickes to reduce production quotas. Unless some way is found to adjust the local situation to national conditions, or the administrator gives recognition to the peculiar nature of the problem in this territory, marketers may find themselves severely handicapped in meeting consumer demands next summer.

The principal producers and refiners in the Rocky Mountain region have called attention to the situation and the general committee for Region 5, of which W. H. Ferguson, vice president of the Continental Oil Co., is chairman, had the subject before it for consideration at a meeting held in Denver this week. Various angles of the problem have been presented to the chairmen of committees and the administrator, but a summary of these as outlined by Chairman Ferguson may give a clearer picture of the situation as a whole.

It is pointed out that in Washington the officials are looking at the country as a whole, and properly so, in an effort to curtail production to market demands. There is a wide divergence, however in the conditions existing in the Mid-Continent, Texas and California fields from those to be found in the Rocky Mountain states. The Oklahoma and Texas fields are so interconnected with pipe line systems that the crude practically all goes into one big pot. This is also true of California, and in those areas most all the producers, refiners and marketers are affected alike.

Plants Isolated

The Rocky Mountain fields, on the contrary, are isolated, not only in regard to the country as a whole, but as to individual fields in the region itself. There are many small and some large refineries in the area. The records for Wyoming alone show more than 100 refineries in the state, not including the very small plants individually owned. Most all of these refineries, and even the larger ones, are dependent for their crude supplies upon specific fields in their immediate vicinity, and other sources of supply are not within economical transportation distances.

The operation of refineries in this territory is more seasonable than in any other part of the country. This is due not only to climatic conditions, but to the greatly enlarged tourist travel to the Rocky Mountain states in the summer. These factors intensify refinery curtailment in the winter and expansion in the summer to meet consumption demands.

The supply of light oil within economical transportation distances of these plants is limited and when refiners curtail operations in winter they must continue to purchase crude for summer demand or they will find upon stepping up their summer operations that their requirements exceed the current runs of crude from the fields.

Observe Shutdowns

The Utah Oil Refining Co. at Salt Lake City, for example, shuts down two months each winter. The Standard Oil Co. (Indiana) refinery at Greybull ceases operations for at least a month. The Continental's Lewistown refinery closes for a month or two and the refineries in the Casper district, including the Standard of Indiana, the Texas Co. and White Eagle at Casper and the Continental at Glenrock, likewise curtail their operations. This is true also of the Parco and other refineries. If the crude oil production quotas are reduced to keep pace with refinery curtailment, the plants will find themselves without sufficient crude upon which to step up their runs in the summer. It becomes imperative that the refiners must accumulate some surplus stocks during the winter months in anticipation of the larger summer runs. Otherwise, the result is that current crude runs in the summer are insufficient to meet the legitimate demands for the trade territory.

The refining business in the Rocky Mountain region, because of the meager population and long distances, is in the hands of several hundred small operators and each refiner is dependent upon one or two small and isolated oil fields for his supply of crude. Because of these conditions it is felt that no general curtailment order for refineries can be equitably applied to all of them. Taking production as a whole, curtailment during the winter inevitably results in a shortage in the summer. Trade territory in this region has been greatly restricted in recent years, but the refiners show no desire to overproduce and invade other trade territory. If they are unable to buy crude in the winter for summer demand, it will seriously interfere with employment in the oil fields and refineries and require marketing companies to purchase supplies needed in the summer from Mid-Continent or California producers and deprive the industry of its own local supplies.

Independent Price

The statement is frequently made that prices in this territory are based on Mid-Continent or California prices, plus freight, but it is stated that this is not true of the territory as a whole. Prices generally are substantially below such prices because of the advantages of local refineries utilizing local crude supplies.

There is no overproduction of light oil in the Rocky Mountain region as a whole and, where fields in individual instances produce more than can be sold locally for lack of demand in markets in economical transportation distance, production in such fields is automatically curtailed. Such curtailment based on market demand seems to be the ideal objective which the Federal administration has in mind, namely, the limitation of crude to market demand and the maintenance of fair prices to producers.

PERMIT REFINERY SALE

CALGARY, Alberta, Dec. 16.—An injunction restraining the proposed sale of the Bell Refinery here by the Spooner Oils, Ltd., to George M. Bell has been dissolved by Justice Ewing. The sale was approved by a majority vote at a recent meeting of shareholders of Spooner Oils, Ltd., which controlled the refining company, but was opposed by Catherine Spooner and minority shareholders.

OKLAHOMA JOBBERS MEETING

The Oklahoma Petroleum Marketers Association will hold its next annual meeting January 11 and 12. The place will be announced later.

No Change Is Decision of Court in Ouster Suit

AUSTIN, Tex., Dec. 18.—Attorney General James V. Allred's appeal from a district court decision sustaining demurrers to his antitrust suit against 17 major oil companies and the American Petroleum Institute, for compliance with the A.P.I. code in past years, was taken up to the third court of civil appeals Monday.

The transcript in the case fills 2,261 pages. Exhibits comprise about 5,000 pages of written and printed material. This is the biggest transcript in the history of Travis County litigation, though the exhibits do not exceed voluminous records of the Sterling vs. Ferguson election suit.

District Judge J. D. Moore sustained demurrers in the suit on the ground that the National Recovery Act contained no saving clause to permit survival of causes of action existing at the time it was made effective.

NEWFOUNDLAND OIL MONOPOLY

CHATHAM, Ontario, Dec. 16.—Termination of the oil monopoly granted last year by the Newfoundland government to Imperial Oil, Ltd., is recommended in the report of the Newfoundland Royal Commission, appointed some time ago to investigate the financial position of the colony. The report has recommended the reversion of Newfoundland to the status of a crown colony.

The monopoly was granted in 1932 in return for assistance given Newfoundland by the company with a view to avoiding imminent default on its public debt. The company underwrote an internal loan of $2,500,000. In return for the monopoly the company agreed to pay to the Newfoundland exchequer a minimum annual sum of $300,000 with a proviso that if royalties on actual sales of petroleum products in any one year exceeded $300,000 such excess would also be paid to the government.

Royalties per imperial gallon were fixed as follows: Gasoline and kerosene, 8 cents; lubricating oils, 15 cents; other petroleum products, 4 cents. Provision was made that the loan might be paid off at any time. The report of the commission says:

"To a large extent the actual grant of the monopoly merely recognized an existing state of affairs, and the expectations that Imperial Oil, Ltd., would use the concession they had obtained with fairness and moderation has not proved unfounded. . . While we have heard no complaints as to the prices charged by the company, we cannot doubt that it would be of benefit to the community if early advantage could be taken of the provision for paying the loan."

OMEGA REFINING CO.

The Omega Refining Co., Brownwood, owned by W. C. Lightfoot and others of Brownwood, successors to the Blue Bonnett Refining Co., is now operating on 42 gravity crude oil which is being trucked from the Centennial Oil Co.'s Matthews lease in northwest Coleman County. The plant, which has a skimming capacity of 200 bbls. per day, is now running 110 bbls. per day, the refined gasoline being blended with natural gasoline manufactured in the Desdemona Pool of Erath and Eastland Counties. The company has a number of retail stations in and around Brownwood which are marketing the refined product.

Chicago Gasoline Spot Market Inactive While Waiting for Turn of the Year

By SPECIAL CORRESPONDENT

CHICAGO, Dec. 18.—With spot market activity down to a low level, especially in gasoline, attention has been turned largely upon the new agreements for marketing. Naturally a good deal of difference of opinion exists. With the turn of the year, many expect the beginning of an active market period.

Jobbers are declining to order gasoline, except bare necessities to keep themselves going for the rest of the year. There are several reasons. In many states the nature of tax laws is such as to make gasoline arriving late in the month something of a liability to the jobber. At this time, too, in every state, there is the disposition to avoid purchasing gasoline until after the one-half cent Federal gasoline tax reduction. In addition, with gasoline prices probably as low as they are likely to go except for possible minor declines, few jobbers desire to carry heavy stocks at inventory time.

Some Not Canvassing

Some refiners and car lot marketers have just about discontinued canvassing the trade for new spot business for the year-end period, feeling it would not pay to do so. Refiners take the attitude that this is made a still wiser course by the fact that they are losing money on each car of gasoline sold, with gasoline prices low and crude prices high, and at least a number of refiners assert they do not care for much more business on this basis. Contract gasoline shipments are not particularly large at this time, for partly the same reasons as apply to spot business. As a whole, of course, refiners are not feeling this so much as they would otherwise, since they have reduced their crude runs materially.

In general, the tone of the gasoline market is easy and spotty. Most of the easiness, it is true, is confined to third grade products. Material is offered in limited quantities here and there, with the aggregate sufficient to bear the tone of the market down slightly. Four cents a gallon is in general considered the bottom of the market for the most of the business, with some material reported available slightly lower. However, an interesting circumstance is that the market, however extremely dull it may be, is proving that it has a definite foundation and is about on bottom in the belief of most observers.

Fuel Oils

The fuel oil grades for heating also are scarce, especially oil for No. 3 purposes. Much blending apparently is going on, to achieve an oil which will serve as No. 3, and some gas oil is being applied to No. 3 orders, it is stated. In some sections of the Middle West, real No. 3 oil is bringing prices that seem excessively high, but little of the product is to be had. Other products such as 24-26 and 18-22 zero are in fairly good demand.

Tank Wagon Dull

Tank wagon and service markets are dull. Price cuts are still in existence, but they do not seem to be growing to any great extent, and third-grade material is accounting for most of them. A third grade price cut at Duluth, Minn., is the principal new disturbance in this territory.

Kerosene continues as dull as, or duller than, gasoline so that most refiners are continuing to throw it over to distillate. Farm kerosene demand is quite slow.

Beginning with good distillate, all heating oils are in good call. Weather, while not extremely cold, has been favorable intermittently to this business. No surplus is available. Most call is for prime, which is equaling kerosene in price. At the same time, light zero gas oil is at least as strong as distillate and in some circumstances it is selling on a parity with prime distillate, with distillate and gas oil freight rates the same. This item is quite scarce.

Wax

Wax remains extremely strong, and available in restricted fashion. Stocks are limited, not only in statistical reports, but in actual availability to buyers in the market. Prices are unchanged.

Lubricants

Lubs appear quiet, but the undertone generally is quite firm. This is more true of the eastern oils than of the Mid-Continent, in this market. Motorists have been active buyers of the new winter motor oils. Some companies are still pressing actively for higher retail motor oil prices. Much new merchandising endeavor is going into motor oil sales.

Naphthas

Sellers of naphthas and solvents are maintaining a strong market position for those products and appear to be getting asked prices in most cases. Demand from various industries is fairly active and the market tone is healthy.

Crude Oil Prices

(Continued from Page 25)

Rocky Mountain States

Ilex, light (Sept. 29, 1933)	$.96
Ilex, heavy (Sept. 29, 1933)	.90
Florence, Colo. (June 17, 1933)	.30
Fort Collins and Wellington, Colo. (June 17)	(See Salt Creek prices)
Big Muddy (Sept. 29, 1933)	1.01
Frannie, light (Sept. 29, 1933)	.87
Frannie, heavy (Sept. 29, 1933)	.62
Salt Creek and La Barge (Sept. 9, 1933)	
See Stanolind Mid-Continent price schedule	
Grass Creek, light (Sept. 29, 1933)	1.18
Grass Creek, heavy (Dec. 16, 1932)	.45
Elk Basin (Sept. 29, 1933)	1.18
Rock Creek (Sept. 29, 1933)	1.02
Dutton Creek (July 8, 1933)	
See Mid-Continent gravity prices	
Lance Creek (Dec. 16, 1932)	.93
Poison Spider (Mar. 5, 1931)	.70
Hudson (June 2, 1931)	.65
Lander (Mar. 5, 1931)	.40
Rex Lake (Feb. 22, 1930)	1.10
Osage (Jan. 18, 1933)	.52
Lost Soldier (Sept. 30, 1933)	.88
Hamilton Dome (Dec. 16, 1932)	.25
Torchlight (Sept. 29, 1933)	1.18
Greybull (Sept. 29, 1933)	1.18
Pondera	1.15
Sunburst (Sept. 29, 1933)	1.35
Cat Creek, Montana	1.07
Hogback (Sept. 29, 1933)	1.11
Lea County, N. Mex. (Sept. 29, 1933)	.75
Maljamar (Sept. 29, 1933)	.70
Artesia-Jackson (Sept. 29, 1933)	.70

Note—Salt Creek, Torchlight, Elk Basin, Grass Creek, Frannie, Greybull, Hogback and Ilex by Stanolind Oil & Gas Co. Elk Basin, Grass Creek light, Big Muddy, Rock Creek and Sunburst by Ohio Oil Co. Lost Soldier posted by Producers & Refiners Corp. Artesia, Jackson and Maljamar posted by Continental Oil Co. Lea County, effective September 29, by Humble Oil & Refining Co. and other buyers; Fort Collins, Wellington, Orchard, Florence, Big Muddy, Cat Creek, Rattlesnake and Table Mesa by Continental Oil Co. Osage posted by Arro.

*Continental Oil Co.

North Louisiana and Arkansas

Smackover, Ark. (all grades)	0.70
Urania, La. (Oct. 3, 1933)	.75
Nevada, Ark. (Sept. 29, 1933)	.60
East El Dorado (Sept. 29, 1933)	.70
Other fields	(See gravity table)

Note—Smackover: Effective September 29, 1933, Tex. Co., Magnolia Petroleum Co., Standard of Louisiana, Louisiana Oil Refining Corp., Gulf Refining Co. and Phillips Petroleum Co. East El Dorado posted by Magnolia Petroleum Co. and Gulf Refining Co., Nevada by Standard Oil Co. of Louisiana. Urania posted by H. L. Hunt, Inc., and Louisiana Oil Refining Co.

Eastern States

TIDE WATER PIPE CO.
(Effective October 4, 1933)

Bradford, Pa.	$2.45
Allegany, N. Y.	2.45

SOUTH PENN OIL CO.
(Effective October 4, 1933)

Pennsylvania Grade Oil in National Transit Lines (Bradford Field)	$2.45
Pennsylvania Grade Oil in Southwest Pennsylvania Lines	2.13
Pennsylvania Grade Oil in Eureka Pipe Line lines	2.07
Pennsylvania Grade Oil in Buckeye Pipe Line lines	1.93
Corning Grade Oil in Buckeye Pipe Line Co.'s lines (Oct. 2, 1933)	1.33

PENNZOIL CO.
(Effective October 4, 1933)

Pennsylvania Grade Oil in National Transit Lines:	
Group A	$2.37
Includes Cochran, Franklin, Hamilton and Doolittle districts.	
Group B	2.30
Includes Titusville district.	
Group C	2.35
Includes Turkey and Tidioute districts.	
Group D	2.34
Includes Bear Creek and Porkey districts.	
Group E	2.33
Includes Eldeneau, Bull Creek, Rough Run, Carbon, Dipner, Bredin, McJunkin, Jameson, Kennerdell, Emienton, Tiona, Lacy and Kinsua districts.	
Price depends on length of pipe line haul to plant at Oil City.	

PURE OIL CO.
(Effective October 4, 1933)

Cabin Creek, W. Va.	$2.17
Bradford Hollow, W. Va.	2.17
Kelly Creek, W. Va.	2.17

Middle Western States

OHIO OIL CO.
(Effective September 29, 1933)

Lima	$1.30
Illinois	1.23
Princeton, Ind.	1.23
Plymouth	Shut in
Western Kentucky	1.18
Midland, Mich. (Sept. 30, 1933)*	1.03
Oceana, Mich. (Oct. 5, 1933)	.90
Somerset, Ky. (Sept. 30, 1933)	1.23
Hart County, Ky. (Oct. 1, 1933)	1.18

*Posted by Pure Oil Co. Producers Pipe Line Co. pays 5 cents per barrel over Pure Oil Co.'s posted price. Somerset, Ky., crude purchased by Ashland Refining Co., Ashland, Ky., and posted price includes premium. Hart County, Kentucky, crude purchased by Stoll Refining Co. Oceana posted by Old Dutch Refining Co. and Naph-Sol Refining Co

Canada

Ontario (December 9, 1933):	
Petrolia*	$2.10
Oil Springs*	2.17
Turner Valley (Sept. 11, 1933):†	
Clear naphtha	$2.15
Discolored naphtha	2.01
Crude oil, 50 gravity	2.66
Crude oil, 45 to 49.9	2.07
Crude oil, 40 to 44.9	1.50

*Imperial Oil, Ltd. †Imperial Oil, Ltd., and Regal Oil & Refining Co.

Mexico

Panuco*	$.69

*F.o.b. ship, based on October transactions and exclusive of production and export taxes and bar dues.

California Crude Oil Prices

STANDARD OIL CO. OF CALIFORNIA
(Effective September 6, 1933)

For current purchases of crude oil at the well (unless otherwise specified). (All gravities above those quoted take highest price offered in that field.)

Gravity—	Long Beach	Seal Beach, Alamitos Heights	Huntington Beach	Inglewood	Playa del Rey	Olinda, Brea Canyon	Athens-Rosecrans	Torrance	Richfield	Whittier, La Habra	Montebello	Santa Fe Springs	La Habra-Coyote	Midway-Sunset, Elk Hills, Buena Vista Hills	Lost Hills	Coalinga	Coyote
14-14.9	$.65	$.65	$.65	$.65	$.65	0.65	....	$.65	$.65	$.65	$.65	....	$.65	0.57	$.57	$.57	$.65
15-15.9	.65	.65	.69	.69	.66	.69	....	.66	.65	.65	.65	....	.65	....	....	....	.65
16-16.9	.66	.65	.72	.73	.69	.73	....	.69	.67	.68	.65	....	.65	....	....	....	.65
17-17.9	.69	.65	.75	.76	.73	.76	....	.72	.70	.71	.65	....	.68	....	....	....	.68
18-18.9	.72	.65	.78	.80	.76	.79	....	.75	.74	.74	.65	....	.71	.61	.61	.59	.71
19-19.9	.75	.65	.81	.83	.80	.82	....	.78	.78	.78	.65	....	.74	.64	.65	.62	.74
20-20.9	.78	.68	.83	.87	.83	.85	....	.81	.82	.81	.66	....	.78	.67	.69	.65	.78
21-21.9	.81	.72	.86	.90	.87	.88	....	.83	.85	.84	.69	$.72	.81	.70	.72	.68	.81
22-22.9	.84	.76	.89	.94	.90	.92	....	.85	.89	.87	.72	.76	.84	.73	.76	.72	.84
23-23.9	.88	.81	.92	.97	.94	.95	$.83	.89	.93	.90	.76	.79	.87	.77	.79	.75	.87
24-24.9	.91	.85	.95	1.01	.97	.98	.86	.92	.97	.93	.80	.83	.90	.81	.82	.78	.90
25-25.9	.94	.89	.98	....	1.00	1.01	.90	.95	1.00	....	.85	.87	.93	.85	.85	.81	.93
26-26.9	.97	.93	1.01	....	1.04	1.04	.94	.98	1.04	....	.89	.90	.96	.89	.88	....	.96
27-27.9	1.00	.98	1.04	....	....	1.07	.97	....	1.08	....	....	.94	.99	.93	.91	....	.99
28-28.9	1.03	1.03	1.07	....	....	1.10	1.01	....	1.11	....	....	.98	1.02	.97	.94	....	1.02
29-29.9	1.06	1.06	1.09	....	....	....	1.04	....	1.15	....	....	1.01	1.05	1.01	.97	....	1.05
30-30.9	1.09	1.10	1.12	....	....	....	1.08	....	....	....	....	1.05	1.09	1.05	1.00	....	1.09
31-31.9	....	....	....	....	....	....	1.12	....	....	....	....	1.09	1.12	1.09	....	....	1.12
32-32.9	....	....	....	....	....	....	1.15	....	....	....	....	1.13	1.15	1.13	....	....	1.15
33-33.9	....	....	....	....	....	....	....	....	....	....	....	1.16	1.18	1.17	....	....	1.18
34-34.9	....	....	....	....	....	....	....	....	....	....	....	1.19	1.21	....	....	....	1.21
35-35.9	....	....	....	....	....	....	....	....	....	....	....	1.23	....	....	....	....	....
36-36.9	....	....	....	....	....	....	....	....	....	....	....	1.26	....	....	....	....	....
37-37.9	....	....	....	....	....	....	....	....	....	....	....	1.30	....	....	....	....	....
38-38.9	....	....	....	....	....	....	....	....	....	....	....	1.34	....	....	....	....	....

Additional Standard Oil Quotations

Elwood Terrace—F.o.b. ship, 33 degrees, $1.03; 34 degrees, $1.06 35-35.9, $1.09; 36-36.9, $1.12; 37 degrees and over, $1.15.

Newhall—14 degrees and over, 57 cents.

McKittrick and Kern River—14 degrees and over, 57 cents.

Wheeler Ridge—14 to 17.9 degrees, 57 cents; 18-18.9, 58 cents; 19-19.9, 61 cents; 20-20.9, 64 cents; 21-21.9, 67 cents; 22-22.9, 70 cents; 23-23.9, 73 cents; 24-24.9, 76 cents; 25 degrees and over, 79 cents.

Kettleman Hills.—33-33.9 degrees, 93 cents; 34-34.9, 96 cents; 35-35.9, 99 cents; 36-36.9, $1.03; 37-37.9, $1.05; 38-38.9, $1.08; 39 degrees and over, $1.11.

The Texas Co. posted in Shiel Canyon, South Mountain and Santa Paula as follows: 14 to 17.9, 57 cents; 3 cents added for each degree up to and including 26-26.9 degrees at 84 cents; then 4 cents added for each degree up to and including 30 degrees and over at $1. Company posts Standard Oil Co.'s Montebello prices in Montebello and North Whittier, and posts Standard Oil Co. prices in Signal Hill, Alamitos Heights, Huntington Beach, Torrance, Richfield and Santa Fe Springs, all effective September 6.

General Petroleum Co. posts Standard Oil Co. prices in Athens, Rosecrans and Signal Hill; Alamitos Heights up to 26-26.9; Santa Fe Springs up to 25-25.9; Richfield up to 25-25.9; Brea Canyon and Olinda up to 25-25.9, and Torrance up to 25-25.9.

Union Oil Co., effective September 6, posts same prices as Standard Oil Co. in all fields in which both purchase, excepting that in Athens-Rosecrans, Union Oil Co. posts 21-21.9, 72 cents, and 32-32.9, $1.18; 34-34.9, $1.21, and 35-35.9, $1.24.

Associated Oil Co., effective September 6, posted same prices for the same grades as Standard Oil Co. of California, excepting that in some fields its gravity scale stops as follows: Huntington Beach, 26 degrees and over; Seal Beach and Alamitos Heights, 36 degrees and over; Coyote Hills, 23 degrees and over; Richfield, 25 degrees and over; Torrance, 25 degrees and over; Inglewood, 24 degrees and over; Santa Fe Springs, 35 degrees and over; Midway-Sunset, Elk Hills, Buena Vista Hills, 30 degrees and over. Also Associated pays 52 cents for oil of 11 to 13.9 gravity in McKittrick, Kern Front, Kern River, Midway-Sunset, Elk Hills, Buena Vista Hills, and Coalinga.

Big League Baseball and College Professorships Figure in Gearench Company Background

By T. F. SMILEY

It's queer what interesting things you bring to the surface when you stir up the settlings. Bestowing a casual once-over upon the plant of the Gearench Manufacturing Co., 313-323 Hughes Street, Houston, Tex., you note merely that it is a well-ordered institution, with an air of efficiency, quality and confidence about it. By delving into its beginnings you discover among other things:

That the president of the company, J. A. Peterson, used to be an instructor in A. and M. College, College Station, Tex.

That C. E. Olsen, vice president and general manager, was a student under Mr. Peterson.

That following his graduation Mr. Olsen became an instructor in the same institution.

That the two college professors laid the groundwork for their subsequent business undertaking while they were members of the A. and M. faculty.

That virtually all the shop employes are college men.

That Mr. Olsen used to be on the pitching staff of the New York Yankees.

That the trademark "Petol"—you thought it was associated somehow with "petrol," didn't you?—was formed from the first letters of the two names Peterson and Olsen.

That—well, maybe that's enough now, though there's a lot more.

Mr. Peterson graduated from Texas A. and M. in 1914 receiving a B. S. in mechanical engineering. Later he took a year of postgraduate work at Cornell University, upon the completion of which he returned to A. and M. as an instructor in 1920.

In the meantime Mr. Olsen had entered A. and M. and during two years of his course there he took machine design under Mr. Peterson. He graduated in 1923 with a degree of B. S. in machanical engineering. That fall he began teaching in the mechanical engineering department of the college, at the same time taking postgraduate work.

Planning for the Future

From that time until 1927, when they organized a company to manufacture a wrench which they had invented and patented, Mr. Peterson and Mr. Olsen were associated as instructors in A. and M. Thus thrown together, they soon discovered they had similar outlooks and ambitions. They talked over plans for the future and they collaborated in the development of their "Gearench"—that is, gear wrench—so named because it was designed to turn and ratchet any shape of bolt or nut, and particularly the gear nut, a nut which the two men expect eventually to become standard. The way the company grew from a small one making this "Gearench" to an important one in the oil industry equipment field is now a matter of history.

But much of interest happened in the meantime. Young Olsen, who had played baseball on the back lots of Clifton, Tex., where he was born, and then on the high school team of that town, continued to play after entering college. He liked the game, of course, but his primary reason for continuing in it lay in the fact that it offered a means of helping him to complete his education and to accumulate money which would be needed in establishing a business later on. It might be mentioned here that at the outset of his college career the young man was not planning a life in the manufacturing field.

In the summer vacation of 1923, the budding pitcher, whose work for the A. and M. team had been watched by baseball scouts, ceased to be an amateur player and entered the ranks of professional baseball, signing a contract to pitch for the Des Moines, Iowa, team in the Western League. His work on the mound that summer won the favorable attention of Miller Huggins, then manager of the New York team in the American League, and at the close of the season he was sold to that organization.

With New York Yankees

Another year as instructor at A. and M. was followed by a summer with Miller Huggins and his New York Yankees. Instead of returning to teaching in the college that fall, however, he obtained a

C. E. OLSEN

position in the engineering department of the National Carbon Co., Cleveland, Ohio.

At the opening of the baseball season in the spring of 1925 young Olsen prevailed upon Manager Huggins to sell him to the Pittsfield, Mass., team in the Eastern League. He had found out that the newer members of a big league pitching staff got little actual work on the mound and inactivity palled on him. Mr. Olsen expresses high regard for his one-time manager in the American League. "Miller Huggins was one of the finest and squarest men I ever knew," he said.

In the fall of 1925 the young man went back to Texas A. and M. as an instructor. The next spring he was sold to the Syracuse team in the International Baseball League. That season closed his service in professional baseball. In the fall he resumed work in A. and M., this time being in charge of the woodworking division of the mechanical department.

Wherever young Olsen went in his baseball travels he had lost no opportunity to visit manufacturing plants and study their methods of operation. He early had discovered that a professional baseball player can have access to many institutions which keep a "No Visitors Allowed" sign conspicuously displayed. He made the most of this favorable circumstance, thus acquiring much valuable information concerning efficiency in plant management.

Meanwhile Mr. Peterson and Mr. Olsen were working out details of their "Gearench." Both had saved all they could out of their incomes, with a view of using the money in establishing a plant for the manufacture of this device. Rather queerly, the two men up to this time had looked upon their "Gearench" as primarily a hardware and machine shop specialty. They had no thought of its peculiar usefulness in the oil field or of the possibility of developing a series of tools embodying the Gearench principle, designed specifically for use in the oil industry. They had not even formed any friendships among oil men.

Goodbye to Professorships

With the close of commencement week at A. and M., in June, 1927, Mr. Peterson and Mr. Olsen bade adieu to their college professorships, incorporated the Gearench Manufacturing Co. with a capital stock of $7,500 and established a small plant on a plot of ground purchased in Hughes Street, Houston. No special inducements were offered to them to locate at this spot and they had to deal with strangers. Other cities had offered them free sites and in one or two instances had agreed to construct the necessary buildings. The site selected was chosen because of the ease with which steel and other material needed could be obtained, good transportation facilities and the conviction that a wide demand for their products would develop in the outlying area.

An 8-inch "Gearench" was manufactured at first. Soon other specialties were added, including a vise, pliers and fence tongs. The next year Mr. Peterson and Mr. Olsen began to see the possibilities of developing pipe and tubing tongs. They started making pipe tongs. The ready demand for them led the new company to add tubing tongs.

Developments came rapidly. New fields for special tools made under the company's patents appeared. One oil field device after another was invented until now the company's list of products includes tubing tongs, pipe tongs, chain tongs, stabbing tongs, friction tongs, welding tongs, breakout tongs, back-up tongs, go-round tongs, fitting tongs, machine tongs, casing tongs, rotary tongs, make-up tongs, derrick floor tongs, carrying tongs, carrying bars, pipe wrenches and sucker rod wrenches. All these are made under the trade name "Petol."

The company, control of which has been retained by Mr. Peterson and Mr. Olsen, increased its capitalization in 1929 to $150,000 and in the present year to $225,000. The plant has been enlarged to take care of expanding business.

When the Gearench plant was established its founders naturally turned for workmen to the mechanical engineering department of the school with which they themselves had been associated. The practice of employing men from the college proved a good one, with the result that it was continued. It is said that today every man but one on the Gearench payroll was a college man.

Tax Refund on Products Sold to State Outlined

(Continued from Page 6)

against the tax due upon any subsequent monthly return, in the amount of tax paid by him under this title with respect to the sale of any such article to the dealer, provided the manufacturer has in his possession evidence showing that (A) such article has after the date Section 621 (a) (3) takes effect been delivered by the dealer to a state or political subdivision thereof for use in the exercise of an essential governmental function and (B) the manufacturer has repaid or agreed to repay the amount of such tax to the dealer or has obtained the consent of the dealer to the allowance of the credit or refund. The claim for refund or credit must be supported by an affidavit of the manufacturer showing (1) the name and address of each dealer; (2) the amount of tax allowable to each dealer; (3) the date the tax was paid to the United States in each case; and (4) whether the manufacturer has repaid or agreed to repay the amount of such tax to the dealer. The claim for refund or credit must also be accompanied with an affidavit of each dealer involved, stating (a) whether the articles on which the tax was paid have been resold and delivered after July 1, 1933, by him direct to a state or a political subdivision thereof for use in the exercise of an essential governmental function; (b) the state or political subdivision thereof to which the sales were made; (c) the nature of the governmental function, i.e., the kind of activities for which purchased; and (d) that the dealer has consented to the allowance of the credit or refund where the manufacturer has neither repaid nor agreed to repay the amount of such tax to the dealer."

Average Octane Number of Regular Gasoline Increased

(Continued from Page 9)

tions to produce rather uniform fuels. In actual practice the larger and more complete refinery manufactures its own "volatility" and is now able to meet practically any reasonable distillation specifications by making simple alterations in the control of his fractionating equipment and by over or under stabilising his cracked and recovery gasolines. The refiner who does not have an elaborate gasoline recovery plant fed by gases produced from extensive cracking operation turns to natural gasoline for his supply of "volatility" and with an adequate supply of the latter available at all times and at a price which permits its liberal use there is no difficulty in producing a motor fuel of any desired volatility in the small refinery as well.

The other factor which has aided materially in bringing about this uniformity in motor fuel has been the general use of Q brand Ethyl fluid in the regular grade. This is a comparatively recent development but through the Ethyl Gasoline Corp. it is now possible for a refiner operating a skimming plant to improve the octane value of average straight-run Mid-Continent gasoline to where it will compete with the cracked blends of the more complete plants.

These two factors of quality, volatility and octane value are given greatest prominence from a marketing standpoint but there are other characteristics of individual motor fuels that continue to distinguish them.

One of these is "gum content." No figures are given in the laboratory tests here to show the wide variation among gasolines in this respect but every refiner and marketer knows a motor fuel could have a satisfactory octane rating and an acceptable volatility index and yet contain so much potential and preformed gum as to make it an unsuitable fuel.

So, through difference in the gum content among gasolines, differences in sulphur content, vapor pressure, recovery, color stability, odor, initial, endpoint, etc., the refinery sales manager continues to be supplied with talking points for his particular products.

There probably will be an equalizing of differences in these characteristics, too, as time progresses because economical means are available to every refiner to further improve his gasoline in any one of these specifications and competition will eventually force the consistently low man to act.

WILLIAM LIVINGSTON DIES

CALGARY, Alberta, Dec. 16. — William Livingston, for many years an outstanding figure in the Turner Valley oil development, died last week at Vancouver, British Columbia, aged 54. Mr. Livingston was ranching at Okotoks when he first investigated the Turner Valley oil possibilities. A small well dug by him yielded inflammable gas, representing the discovery in the field. Later in conjunction with J. D. Pugh and W. E. McLeod, he formed the Southern Alberta Oil Co. and Southern Alberta Refineries, Ltd. Southern Alberta's No. 1 was the first Turner Valley producer to pay dividends, while the refining subsidiary's plant was the first commercial refinery in Alberta. Both were merged in the Dalhousie Oil Co.

Elimination of Federal Tax on Gasoline Urged

Under the National Recovery Act, and in accordance with the President's proclamation, the additional one-half cent Federal tax upon gasoline expires January 1, 1934, repeal of the Eighteenth Amendment having been effected. The original 1-cent Federal tax, however, remains. Director B. H. Markham, of the American Petroleum Industries Committee, says it would seem as if now were the logical time to seek the elimination of the 1-cent levy also. It was imposed to provide revenue for general purposes, admittedly a violation of the intents and purposes of gasoline taxation — the financing of highway construction, improvement, and maintenance. Sponsors contended that the Federal Government, facing a desperate financial situation, had no other recourse and no other universally used commodity to tax.

Conditions have changed. Internal revenue collections increased 73 per cent in the first four months of the Federal Government's new fiscal year, being $777,407,115 against $447,957,961 in the corresponding months of the prior fiscal year. Income tax receipts are growing with improvement in business conditions and the closing of the larger loopholes in tax laws. A considerable and continued increase now is expected. Liquor once again is a marketed commodity. From it the Federal Government looks for more than $500,000,000 revenue.

There is evidence of a disposition in Congress to eliminate duplicating taxes along lines recommended by a committee which made an exhaustive study of the subject and cited the duplicating taxation of gasoline as a prominent example. Certainly no other commodity now bears so many excessive and disproportionate taxes.

A number of congressmen publicly have stated that taxpayers are entitled to tax relief, either through reduction of tax rates or a redistribution of the tax burden. Removal of the Federal tax upon gasoline would reduce this tax burden, on the average, about 20 per cent. And since this levy is only one of several Federal taxes paid by the motorist, its removal would be of material benefit in the redistribution of tax burdens.

Conditions within the petroleum industry also have changed. The development and promulgation of the oil code, coincident with the creation of the Planning and Co-ordination Committee and affiliated groups, comprising more than 1,000 oil men working in close co-operation with the administration, have focused attention upon the petroleum industry's problems and have inspired serious efforts to solve them. The matter of taxation, as a problem of first importance, cannot be overlooked. It may be expected that in this influential group the petroleum industry will have a "friend at court" when tax matters come up for consideration.

Governors of many states frequently have declared that Federal gasoline taxes are an invasion of state revenue sources. State legislatures have adopted memorials asking Congress to make it possible for the Federal Government to withdraw from this tax field. The earnest support of state governments therefore may be expected for any movement seeking the removal of this tax.

Further support may be looked for from motorists, agricultural, automotive, highway, taxpayer, civic, business, and other organizations, as well as from many members of the U. S. Senate and the House of Representatives. Newspaper editors generally are opposed to its continuance.

This tax cost motorists $62,839,825.70 in 1932. In the first 10 months of 1933 the cost was $141,378,449.12. The total cost for 1933 probably will be close to $180,000,000. In addition, motorists paid $7,067,419 in Federal lubricating oil taxes in 1932, and $18,314,416.65 in Federal lubricating oil taxes in the first 10 months of 1933. The total cost for 1933 is estimated at $22,500,000.

So far as the petroleum industry is concerned, it paid additional levies totaling $2,577,904.81 in Federal taxes upon pipe lines. Such tax payments in the first 10 months of 1933 amounted to $8,495,579.46, and the total cost for the entire year is estimated at $10,500,000.

Oil Men in Washington to Protest the Proposed Drastic Income Tax Changes

By ANDREW M. ROWLEY

WASHINGTON, D. C., Dec. 18.—Hearings will start here Wednesday on a proposal of the subcommittee of the Committee on Ways and Means of the House of Representatives to reduce depletion allowances on oil-producing properties 25 per cent and to eliminate entirely allowances for discoveries. It has been estimated if these proposals are approved and enacted into law, the cost to the petroleum industry will be approximately $100,000,000 a year.

The subcommittee of the Ways and Means Committee has submitted a preliminary report on "Prevention of Tax Avoidance," relative to methods of preventing the avoidance and evasion of the internal revenue laws together with suggestions for the simplification and improvement thereof. That report recommends the reduction during the years 1934, 1935 and 1936 of depletion and depreciation allowances by 25 per cent. The present allowable is 27½ per cent. In this connection the report states: "Your subcommittee has been impressed by the extent to which taxable net income is reduced by the deductions for depreciation and depletion, allowed under Sections 23 (k) and (l) of the Revenue Act of 1932. While recognizing the soundness from an accounting standpoint of these deductions your subcommittee recommends that for the years 1934, 1935 and 1936 these allowances be reduced by 25 per cent."

In the matter of discovery allowances, the report says: "Section 102 of existing law provides that in the case of the sale of mines and oil or gas wells where the principal value of the property has been demonstrated by prospecting or discovery work done by the taxpayers, the tax attributable to such sale shall not exceed 16 per cent of the selling price.

"This provision was inserted in the law apparently as a subsidy to encourage the development of new mines and oil wells. In the present state of overproduction there is no need to continue this subsidy, and your subcommittee recommends the elimination of the entire section."

Not only is the oil industry interested in this development but all other natural resource industries are vitally concerned. Representatives of the mining, lumber, coal and other natural resource businesses will be heard at the hearing here Wednesday.

William N. Davis, vice president of the Phillips Petroleum Co. of Bartlesville, came to Washington on this matter. He is an expert on taxes and probably will present before the subcommittee the situation as it pertains to the oil business. Fayette B. Dow, counsel for the National Petroleum Association, is working on the matter also and will be heard before the committee.

OIL INDUSTRY PROTESTS

W. N. Davis, president of the general Mid-Continent Oil & Gas Association, together with Clarel B. Mapes, acting secretary and manager; Harry Camp of the National Petroleum Engineering Co., John Cullen of the Continental Oil Co. and F. B. Plank of the Empire Oil & Refining Co., are in Washington to protest against proposed tax changes that it is said would cost the oil industry $100,000,000 in additional taxes if they are accepted and passed by Congress. The hearings were to extend through four days during which all the tax burdens of the oil industry will be subjected to review.

GERMAN COAL-GASOLINE PLANT

A plant to produce gasoline from coal will be built and run by the state government of Saxony if present plans materialize. The new enterprise is to be included in the national motorization plan developed by the present German regime.

ALKY BILL IN AUSTRALIA

The motor vendors' bill, introduced in the legislative assembly of Queensland, Australia, provides for a compulsory mixture of 10 to 20 per cent alcohol in all imported gasoline in order to dispose of surplus sugar cane and grain.

ORLANDO WEAVER DIES

LOS ANGELES, Calif., Dec. 16.—Orlando Weaver, superintendent of the gasoline department of Barnsdall Oil Co. of California, died in Santa Barbara as a result of injuries received early in December in an automobile accident.

LONG LAKE TEST

FORT WORTH, Tex., Dec. 19.—Tide Water Oil Co. and others' No. 2 Monnig test, Long Lake area, Anderson County, tested from top sand 5,202 feet, to total depth 5,258 feet, and showed no oil, gas or water. It will core deeper.

MAJEWSKI'S COMMENT

B. L. Majewski, member of the Planning and Co-ordination Committee, terms the new pool and marketing oil plan the first honest proposal ever made on a national basis to jobbers and dealers.

Late Fields

OKLAHOMA

The Lewis Production Co. defined the Naval Reserve Field, in Osage County, on the southwest so far as the Bartlesville sand is concerned when it drilled into water in that sand in its No. 1, NE cor. SE NE Section 32-24-7. The Bartlesville formation was topped at 2,610 feet and drilled to 2,681 feet.

The companies operating in the Naval Reserve Field have been cited to appear before the State Corporation Commission to show cause why the new Osage County field should not be added to the prorated fields. The Lewis Production Co., Producers & Refiners Corp., Continental Oil Co., The Texas Co., A. H. Kasishke, Inc., and Skelly Oil Co. operate in the field.

The Texas Co.'s No. 1 Denny, C NE SE Section 33-17-4w, Crescent Pool, Logan County, cored a saturated sand at 6,039-55 feet. About 10 per cent of the core was recovered. The well is expected to prove a half mile south extension of the field. The Mid-Continent Petroleum Corp.'s No. 1, C SE NE Section 33-17-4w, was drilling at 6,033 feet. It lies between the Texas Co.'s well and a producing well of the Carter Oil Co. and Gypsy Oil Co. in Section 33.

The Carter Oil Co.'s No. 3, C N half Section 23-9-6, Seminole County, was drilled deeper and produced 414 bbls. in 24 hours from Wilcox sand at 4,045-71 feet.

Hilton Phillips' No. 1, C NE NE SW Section 21-7-4, Pottawatomie County, was making 4,000,000 feet of gas and spraying 4 bbls. per hour from Hunton lime at 3,592-3,692 feet.

OFFER BY GAS OPERATOR

CALGARY, Alberta, Dec. 16.—Eugene Coste, gas operator and geologist, of Toronto, has offered his former residence in Calgary to this city for use as a hospital or community cultural center.

Independent Petroleum Association of Texas

AUSTIN, Tex., Dec. 18.—Members of the Independent Petroleum Association of Texas held their annual meeting in Austin Monday. Maj. J. R. Parten, Shreveport, president, recounted the work of the organization during 1933 in the principal address.

A new board of directors, elected during the meeting, will hold a session in February to name officers for 1934. Members of the new board include: C. P. Burton, W. E. Butler, Tom Cranfill, D. H. Byrd, J. O. Fox, E. B. Germany, Dallas; Bailey W. Hardy, Austin; R. W. Brown, Jr., R. L. Cannon, San Angelo; C. R. Cole, Laredo; Joe Danciger, Frank Kelsey, C. L. Morgan, John A. Thompson, Stanley A. Thompson, B. F. Weekly, Fort Worth; J. M. West, George S. Heyer, J. H. Reynolds, Houston; Mel Davis, Pampa; H. B. Gray, J. R. Parten, Shreveport, La.; E. H. Hayward, Big Spring; H. L. Lockhart, Colorado, Tex.; John Olvey, Longview; Harry Pennington, R. L. Schoolfield, San Antonio, and Charles S. Richardson, Olney.

ROCKY MOUNTAIN FIELDS

Estimated average daily production for the week ending December 16 follows:

	Bbls.
MONTANA	
Buckley Border	220
Cat Creek	690
Cut Bank	1,180
Dry Creek	400
Kevin-Sunburst	3,300
Lake Basin	50
Pondera	700
Total Montana	6,540
WYOMING	
Salt Creek	18,430
Big Muddy	1,740
Badger Basin	40
Byron-Garland	50
Byron-East	10
Dallas Derby	280
Dutton Creek	70
Elk Basin	550
Ferris	0
Frannie	230
Grass Creek	649
Greybull	10
Hamilton Dome	630
Hudson	200
LaBarge	960
Lance Creek	260
Lost Soldier	1,660
Mule Creek	shut in
Midway	70
Notches	shut in
Oregon Basin	1,300
Osage	660
Pilot Butte	30
Rex Lake	shut in
Rock River	1,280
South Casper	shut in
Poison Spider	240
Teapot	20
Warm Springs	0
Total Wyoming	29,350
COLORADO	
Florence	200
Fort Collins and Wellington	600
Iles	700
Moffat	520
Orchard	110
Rangely	90
Tow Creek	210
Total Colorado	2,430
NEW MEXICO	
Artesia	590
Coopear area	60
Empire area	shut in
Eunice area	1,050
Getty Pool	0
Hobbs	33,470
Hogback	210
Hospah	shut in
Jal	1,630
Lea area	2,220
Jackson	1,130
Maljamar	230
Rattlesnake	800
Table Mesa	90
Total New Mexico	41,470
Total all fields	79,750
Previous week	80,050
Difference	300

WELL SPACING IN LUCIEN

WASHINGTON, D. C., Dec. 19.—The Planning and Co-ordination Committee today granted a hearing to operators in the Lucien Field in Noble County, Oklahoma, on the question of well spacing. Owners of nearly 75 per cent of the acreage in the field favor the drilling of one well to 40 acres, but there is a minority which would like to drill the field closer than that. The Planning and Co-ordination Committee is asked to recommend a ruling on the question. The decision would come from Secretary Ickes.

Test in Old Sligo Field, Bossier Parish, La., Has Oil and Gas Operators in District Puzzled

By J. R. CRUMPTON
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., Dec. 18.—The United Gas Public Service Co.'s No. 1 Skannall Unit, Section 13-17-12, in the old Sligo gas field, Bossier Parish, is proving itself to be a conundrum for the oil and gas operators of the North Louisiana district. The well was started as a deep test to the Trinity or lower Cretaceous horizons in an old field that has been a consistent gas producer from three stratums in the upper Cretaceous, namely, the Nacatoch from 1,400 to 1,500 feet, the Blossom from 1,700 to 1,800 feet and the Woodbine from 2,450 to 2,550 feet. In the process of drilling the well, 12½-inch surface casing was set at 201 feet and 10-inch set at 2,660 feet. While drilling at 3,220 feet, the well blew out with the drill stem in the hole and ran wild for more than a week, making an estimated 50,000,000 to 75,000,000 feet of gas daily with a small spray of salt water from 560 feet of open hole. After killing the flow and cleaning the hole, a 5-foot core of hard lime was cut from the bottom. Seven-inch casing was then set at 3,087 feet, the plug drilled, and, when tested, the well developed a flow by periodical heads of 150 bbls. daily of 42 gravity oil. There is practically no gas pressure which seems to assure that the 7-inch casing, set at 3,087 feet, cut off the gas sand. The only other well in this field to show oil of any consequence was Triangle Drilling Co.'s No. 1 Jeter, Section 23-17-12, about one-half mile southwest of the present test. This well was completed as a good gasser from the upper Trinity at 4,276 feet, but the oil is coming from the same horizon as the present well through a bad casing seat at 3,900 feet. The exact formation from which the large flow of gas and the later oil production is coming has not been definitely logged yet, but is known to be in the upper part of the lower Cretaceous, between the Woodbine and upper Trinity, probably the Washita or Fredricksburg. From a standpoint of a new producing horizon in that area, the immense flow of gas from the 560 feet of open hole below 2,660 feet overshadows the small oil flow of 42 gravity to the operators of the well. As it is the well will produce about 150 bbls. daily by heads, and with gas pressure applied should make 500 bbls. daily. It is not known at the present writing what course will be pursued by United Gas Public Service Co., owners of the well, but the results definitely define a new producing horizon of both oil and gas in the Sligo area.

NORTH LOUISIANA

Several other wildcats in North Louisiana are receiving more than passing attention. North of the Elm Grove Field in Bossier Parish, Dr. C. R. Reed, trustee's No. 1 Dotys, Section 7-16-11, cored gas sand from 2,434-40 feet and oil sand at 2,461 feet. The well is arranging to test at this depth. Haynesville Partnership's No. 1 Anna Taylor, Section 11-23-8, on the northeastern flank of the Haynesville Field, is lubricating stuck drill stem at 3,980 feet. This is a deep test to the Trinity series. In DeSoto Parish, Gravel Point Syndicate's No. 1 Guy, Section 4-14-12, tested salt water from 2 feet of sand at 2,615 feet and is drilling deeper. In the southern part of the same parish, George LeGrand reports 1 foot of sand with a show of oil and gas in his No. 1 C. W. Faris, Section 19-11-15. E. T. Oakes has resumed drilling on his deep test near Longstreet, DeSoto Parish, No. 1 Bryant, Section 30-13-15, and is coring lime at 4,768 feet. With the base of the chalk logged at 1,728 feet, A. H. Tarver's No. 1 Barnhart, Section 16-15-13, is reaming to bottom at 2,395 feet. A shallow test in Grant Parish, L. L. Lindsey's No. 1 Edenborn, Section 13-7-4, is arranging to test a show of gas at 925 feet. Foster & Woodley's No. 1 D. E. Stevens, Section 17-9-11, in the Spring Ridge area, Sabine Parish, deepened the hole to a total depth of 3,401 feet but tested dry at 3,329 feet. After bridging back to 3,173 feet, arrangements are being made to shoot the well in an effort to revive the show which developed from 3,159-66 feet. The operators believe the pay sand was cut off when 7-inch casing was set at 3,146 feet.

Wildcat activity was reflected with the announcement of four new blocks being assembled in the North Louisiana district. Gulf Refining Co. has staked location for its No. 1 Luther Ford, Section 8-22-13, located on a 10,000-acre block about 7 miles west of Plain Dealing in Bossier Parish. The gasoline core rig, capable of making a 5,000-foot hole, is being moved from the Webster Parish block, east of Minden, to the present location. This acreage is north of a test drilled about two years ago by the Plain Dealing Oil Co., and which has been making about 15 bbls. of 30 gravity oil from the 3,000-foot level. The block has been checked by torsion balance and seismograph. In East Carroll Parish, O. G. Collins and Pat Marr have assembled 20,000 acres centering around Section 31-22-12e, with a contract to begin a 3,000-foot test by March 1. The acreage is about 4 miles northeast of a well drilled by the same operators about four months ago and which had encouraging indications. W. E. Hall, discoverer of the Blanchard gas field in Caddo Parish, is assembling a block of 2,000 acres in Sections 4, 5 and 9, Township 17, Range 11, east of the Sligo area in Bossier Parish. The contract calls for a 3,500-foot test to begin within 30 days after the block is completed. In DeSoto Parish, Ray Harris and Joe Tuffree are assembling 2,000 acres centering around Section 1-10-13, to begin within 90 days after completion of block. Only four other new operators were reported in this district, one in Caddo Parish and the remaining three in the Converse Field of Sabine Parish.

The completions in North Louisiana scored a high average with five producers out of a total of six. All of the producers were reported from the Converse Field. Commerce Oil Co.'s No. 1 M. J. Paul, Section 9-9-13, a western extension of shallow chalk rock production, is flowing by heads 50 bbls. daily from 1,933 feet after using acid at that depth. In Section 29-9-13, Lula M. Layton's No. 1 Henderson is flowing through 6-inch casing 75 bbls. daily from 1,980 feet. C. L. Nixon's No. 1 Patrick, Section 21-9-13, was a 10-bbl. pumper from 1,990 feet, and L. L. Posey's No. 1 A. J. Burkett, Section 10-9-13, was a 40-bbl. pumper from 1,838 feet. Windsor Oil Co.'s No. 2-A E. L. Graham, Section 20-9-13, treated with acid at 1,953 feet and 1,978 feet, was completed at the latter depth pumping 45 bbls. daily.

ARKANSAS

Two completions and one new location was reported from Arkansas during the week. O. F. Whittaker's No. 1 Garney, Section 11-15-20, was completed pumping 12 bbls. daily from 2,102 feet and extended production slightly to the north in the Stephens area, Columbia County. In the Smackover district, Ouachita County, J. E. Crosbie's No. 1 C. Primm was pumping 70 bbls. daily from a total depth of 2,091 feet. Marine Oil Co.'s No. 2 Union Saw Mill Co., Section 3-18-13, in the Urbana area, is flowing by heads 50 bbls. daily but will be rigged up to pump to increase the production. The new location was staked in Lafayette County. Douglas Lawn has derrick up for his No. 1 Camp in Section 14-15-23.

In Conway County, Southern Union Gas Co.'s No. 1 Feldmen, Section 6-6-17, after being shut down at 60 feet for water, is drilling in sandy shale at 2,103 feet. A. H. Bagnelle's No. 1 Trottner & Rhinehart, Section 2-13-26, Hempstead County, is arranging to set 7-inch casing at 945 feet for a thorough test. Union County has several active tests as follows: D. S. Brooks' No. 1 Murphy Land Co., Section 34-19-18, set 10-inch at 150 feet and is drilling at 1,030 feet; E. R. Henderson's No. 1 Vines, Section 29-18-14, set 10-inch surface casing at 112 feet and is drilling at 500 feet; Sam M. Richardson's No. 1 J. P. Hammond, Section 19-17-15, is drilling in shale and gumbo at 1,608 feet.

Wildcat Operations in Louisiana-Arkansas

(Rotary operations unless otherwise designated)

North Louisiana

BIENVILLE PARISH

Company, well, farm name, section and block—	Remarks:
Poole & Johnson's No. 1 H. E. Suddith, 1,170 ft. E and S, C Sec. 28-14-16	Derrick.

BOSSIER PARISH

McKinney & Stewart's No. 1 Nattin, 470 ft. W, 1,620 ft. S, NE cor. Sec. 22-22-14	S.D. 1,430 ft.
C. E. Reid, tr.'s No. 1 Dotys, 730 ft. S, 618 ft. W, NE SE Sec. 7-16-11	Coring 2,461 ft.

CADDO PARISH

W. O. Bliss' No. 1 McDade, 330 ft. N and E, SW cor. NW NW Sec. 2-20-15	Rigging up.
A. D. King, tr.'s No. 1 Roach, 641 ft. E, 375 ft. N, SW cor. Sec. 4-14-16	S.D. 1,154 ft.

CALDWELL PARISH

Hartley et al's No. 1 Taylor, most southeasterly cor. Sec. 42-14-4e	Derrick.
Terrell & Price's No. 1 La. Central Lbr. Co., 300 ft. N, 200 ft. W, SE cor. NW NE Sec. 18-11-3e	S.D. 1,772 ft.

CATAHOULA PARISH

T. R. Hincey's No. 1 Millsaps, Sec. 32-9-6e	Derrick pattern (corrected).

CLAIBORNE PARISH

Haynesville Partnership's No. 1 Anna Taylor, 330 ft. N and E, SW cor. SE SW Sec. 11-23-8	Lubricating; stuck D.S. 3,980 ft.

DE SOTO PARISH

Bailey Gantz et al's No. 1 Jenkins, NW cor. SE SW Sec. 35-13-12	S.D. 3,600 ft.
Gaskill et al's No. 1 Jim Guy, 200 ft. N, 300 ft. W, SE cor. Sec. 3-11-13	Drlg. 1,725 ft.
Gravel Point Synd.'s No. 1 Guy, 200 ft. N and E, SW cor. Sec. 4-14-12	Drlg. 2,620 ft.
Hirschfield-Bailey Interests' No. 1 Mickle, 660 ft. N and E, SW cor. SE Sec. 7-13-12	S.D. 1,775 ft.; csg. collapsed.
Geo. M. LeGrand's No. 1 Faris, 330 ft. S and W, NE cor. SE Sec. 19-11-15	Testing 2,360 ft.
D. H. Sebastian, Jr.'s No. 1 W. H. Hill et al, 200 ft. S and E, C Sec. 3-10-13	Set 12¼-in. 40 ft.
A. F. Tarver's No. 1 Barnhart, 330 ft. N and W, SE cor. NE Sec. 16-15-13	Reaming 2,395 ft.

GRANT PARISH

L. L. Lindsey et al's No. 1 Edenborn, 250 ft. E, 150 ft. N, SW cor. SE SE Sec. 13-7-4	Testing 925 ft.; (corrected).

JACKSON PARISH

A. C. Thomas' No. 1 Johns, 330 ft. N and W, SE cor. NE NE Sec. 25-1s-3	S.D. 2,055 ft.

NATCHITOCHES PARISH

Geo. R. Stevens' No. 1 Clarke-Boyce Lbr. Co., 330 ft. N and W, SE cor. Sec. 10-5n-6w	Rigging up.
J. B. Storey, tr.'s No. 1 Page est., ND cor. SE NW Sec. 18-8-9	S.D. 40 ft.

SABINE PARISH

Frank R. Foster, Inc.'s No. 1 D. E. Stephens, 330 ft. S and E, NW cor. SE NW Sec. 17-9-11	Shooting hole 3,173 ft.; old T.D. 3,401 ft.

CONVERSE DISTRICT

Arrock Oil Co.'s No. 1 Hewitt, 330 ft. N and E, SW cor. NE SE Sec. 20-9-13	Treating with acid 1,606 ft.

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Daily Average Runs

A decline of 545 bbls. daily in the runs from the fields of North Louisiana and Arkansas was shown during the past week. The former showed a net loss of 420 bbls. and the latter 125 bbls. The daily average runs from the several pools were:

NORTH LOUISIANA

Caddo light	4,545
Caddo heavy	1,345
Converse	840
Cotton Valley	510
DeSoto and Red River	1,510
Elm Grove	355
Haynesville	3,625
Holly	190
Homer	2,595
Pleasant Hill	240
Sarepta-Carterville	835
Urania	3,150
Zwolle	5,880
Total North Louisiana	25,630
Total previous week	26,050
Decrease	420

ARKANSAS

Champagnolle	1,250
El Dorado	2,600
Lisbon	420
Miller County	955
Nevada	565
Smackover light	2,640
Smackover heavy	20,935
Stephens	650
Urania	2,419
Total Arkansas	32,455
Total previous week	32,580
Decrease	125
Total both states	58,085
Total previous week	58,630
Decrease	545

Ector County Has One of Its Best Completions; New Ordovician Wildcat in Regan County

By L. E. BREDBERG
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Dec. 18.—Drilling activity in the Permian Basin last week was comparatively small, with other weeks, there being only four new tests started. These were in Ector, Glasscock, Loving and Ward Counties.

Fred Turner, Jr. is drilling a water well for his No. 2-A Addis in Section 35, Block 43, Township 2s, T.&P. Survey, after completing his No. 1-B Addis the past week for one of the best wells completed in that area. The well flowed 320 bbls. in 24 hours after being shot with 200 quarts from 3,850-3,930 feet. No increase in oil or gas was had in drilling to 4,073 feet from where it was bridged back and then shot. The completion of this test extended production in this area about one-quarter of a mile south. It is located in Section 35, Block 43, Township 2s, T.&P. Survey.

Frank Gilpin, Jr. and others' No. 1 B. H. Blakeney, a wildcat drilling in Section 32, Block 43, Township 1n, T.&P. Survey, northern Ector County, about 1¾ miles northeast of Stanolind Oil & Gas Co.'s No. 3 Cowden, is reaching an interesting depth and the outcome of this well should be known the latter part of this week. The test is credited with topping the brown lime at 3,875 feet, and reported to be checking somewhat higher on the lime than the Stanolind-Cowden well. It is now shut down at 3,903 feet in lime waiting on casing.

New Ordovician Test

A new Ordovician wildcat test is reported to oe drilling in Reagan County by P. Kirschner on the McIntosh ranch on a block of approximately 6,000 acres. The drilling contract reported to have been let to Flaherty Brothers of Tulsa provides for setting of 10-inch casing at 2,900 feet which will permit deeper drilling if indications are favorable. The test will be 10 miles northeast of the Big Lake Pool in Reagan County and near the town of Stiles.

Continental Oil Co.'s No. 9-B University in the Big Lake Field, Reagan County, has been plugged back to 8,692 feet from a total depth of 8,850 feet, and the company is now treating with acid. This is the first well treated with acid in the field. It is in Section 39, Block 9, University Survey, and is 2,500 feet east of the nearest deep producer.

Crane County

Gulf Production Co.'s No. 1 Tubbs, discovery well and only producer in Section 8, Block 27, P.S.L. Survey, Crane County, has been reworked and the success of this workover job has revived interest in this area. It started flowing 160 bbls. per day, but has fallen to 35 bbls., caving in the hole causing the drop. It is now being cleaned out.

Loffland Brothers' No. 1 Tubbs, north of the Tubbs discovery well in Crane County, is shut down for the holidays at 4,510 feet showing about 500,000 feet of gas from 4,347-51 feet.

Runnels County

Amber Crude Oil Purchasing Co. has completed its 4-mile 2-inch line from the McMillan Pool in Runnels County and connects the Wade producer to a six-car loading rack on the Abilene & Southern Railroad. Two more wells are nearing completion in the pool: B. C. Mann and others' No. 1 Wade, east offset to Amber Petroleum Co.'s No. 1 Wade, is the largest producer in the field, and another well owned by the same operators located 1 mile northwest of the discovery well. The outcome of these wells will have much to do with the future drilling in this field.

Two Deep Tests

Gulf Production Co.'s Ordovician deep test in Upton County is drilling below 8,375 feet with no show of oil or gas. Location is in Section 197, Block F, C.C.S.D.&R.G.N.G. The other Ordovician test, being drilled by the Humble Oil & Refining Co. in Pecos County, is drilling below 6,666 feet. It is located in Section 44, Block Z, T.C. Survey.

Glasscock County

Amerada Petroleum Corp. has made location for its No. 6 Coffee in the Glasscock Pool in Glasscock County. Location is in Section 22, Block 33, Township 2s, T.&P. Survey.

Loving County

The Sinclair Prairie Oil Co. has made location for its second test in the Wheat Pool in Loving County. Location is in Section 91, Block 1, W.&N.W. Survey.

Ector County

L. C. Harrison's No. 2 Addis, located in Section 35, Block 43, Township 2s, T.&P. Survey, in Ector County, caught fire during the week, but the fire has been extinguished, and it is now making an estimated 5,000,000 feet of gas per day. Total depth is 3,836 feet.

RANGER AND WICHITA FALLS

Activities in the Wichita Falls district continue at a rapid rate, including the staking of new locations and treating of lime wells with acid. There were 42 locations staked in the Ranger and Wichita Falls districts during the week. Archer, Shackelford, Callahan, Brown and Coleman County had most of the new tests.

The test of the Oplin Oil & Gas Co. in Section 349, G. W. Denton Survey, which was showing for an Ellenberger producer at 4,490 feet a couple of weeks ago, does not look encouraging at present. The operators are drilling by tools and are 90 feet off bottom with a bunch of cavings in the hole. Several other deep tests have been drilled in this southwestern area in Callahan County, some of which showed for Ellenberger lime producers, but later proved dry. This test had some oil in the hole at 4,490 feet and casing was set at 4,215 feet preparatory to testing, but now it, too, has water in the hole.

Anzac Oil Corp., which is drilling several miles to the southeast of this test, has sold a spread of acreage around its test to the Phillips Petroleum Co. and also to the Kingwood Oil Co. The test is on the Johnson ranch. Each company purchased a one-eighth interest in the block and test, which will be drilled to the Ellenberger lime.

Simms Oil Co. and Humble Oil & Refining Co. have each purchased a spread of acreage around the Associated Developers' deep test now drilling in Survey No. 287, T.E.&L. Survey, northeast of Newcastle, in the 2,800-foot lime area of Young County. Associated Developers was recently formed by a group of small companies and independents of Wichita Falls for the purpose of blocking acreage and drilling several deep tests in the Wichita Falls district. The Young County test is the first of the series to be drilled.

Repressuring in Shackelford

Roeser & Pendleton and Humble Oil & Refining Co.'s 332 wells in the Cook Pool, Shackelford County, are now being repressured again, the daily average production increasing from 610 to 1,170 bbls. per day. The gas pressure in this field became so low that the two companies recently laid a line from the field to connect with the Lone Star Gas Co.'s line south of Albany to take 1,500,000 feet of gas per day from that line for repressuring purposes, paying 12 cents per 1,000 feet for the gas. The results show the repressuring to have been successful.

Crude Stocks

Crude oil stocks in the Ranger and Wichita Falls district were 9,540,870 bbls. on December 1, compared with 9,171,665 bbls. the previous month. There were 216,160 bbls. of casinghead gasoline manufactured in the districts during November, a drop of 2,410 bbls. under the previous month's output. The larger manufacturers of such gasoline in the districts are the Texas Pacific Coal & Oil Co., Lone Star Gasoline Co., Hanlon Gasoline Co., Phillips Petroleum Co., Humble Oil & Refining Co., Mid-Kansas Oil & Gas Co. and Magnolia Petroleum Co. Twenty-four companies own plants in the two districts.

Pitzer & West completed a good producer northwest of Graham in the James Pool, Young County, this week after treating the well with acid. The owners of acreage and other wells in this area are owners of the Chemical Process Co., Inc., of Breckenridge, Tex., and have treated many wells in the lime areas of Ranger and the Wichita Falls district. This well is their No. 3-A W. Williamson and is in Section 458, T.E.&L. Survey. It topped the lime at 3,830 feet and was bottomed at 3,920 feet, flowing 392 bbls. in 24 hours after cleaning out the acid and top load.

May Open New Area

Texas Co.'s No. 1 J. H. Kindley, in Section 454, T.E.&L. Survey, eastern Young County, looks as if it would open another wildcat lime producing area in this county. The test began showing oil and gas at 3,899 feet and is now drilling below 3,920 feet in lime. Six and five-eighths inch casing was cemented at 3,893 feet. If this test makes a producer it will be the third wildcat discovery opened in the county by the company within the past year.

Production in the Wichita Falls district averaged 57,350 bbls. during the week, a gain of 525 bbls. over the previous week.

Wildcat Operations in West Texas

Week Ending December 18

Company, well, farm name, section and block—	Remarks:
ANDREWS COUNTY	
Fuhrman Pet. Co.'s No. 1-B Bonner, 1,320 ft. from N line and 1,320 ft. from E line of Sec. 25, Blk. A-43, P.S.L. Sur.	Derrick.
BREWSTER COUNTY	
C. M. Joiner's No. 1 McIntyre	S.D. 1,100 ft.
CONCHO COUNTY	
Mintex Oil Co.'s No. 2 Waring Estate, 660 ft. from N line, 150 feet from W line SW ¼ Sec. 3126, A. T. Robinson Sur.	Underreaming 2,660 ft.
CRANE COUNTY	
Continental Oil Co.'s No. 2-C Cowden, 330 ft. from N line and 1,650 ft. from W line, Sec. 51, Blk. X, C.C.S.D.R.G.&N.G. Sur.	Drlg. 2,015 ft.
Gulf Prod. Co.'s No. 1 Edwards, 330 ft. from S line and 330 ft. from E line of Sec. 21, Blk. B-18, Public School Land Sur.	Drlg. 2,745 ft.
Loffland Bros.' No. 1 Tubbs, 1,324 ft. from N line, 1,320 ft. from W line, Sec. 9, Blk. 27-B, P.S.L. Sur.	Drlg. 4,480 ft.
CROCKETT COUNTY	
Porter Rankin's No. 1 Todd, 1,500 ft. from N line and 3,020 ft. from E line of Sec. 68, Blk. UV, G.C.&S.F. Sur.	Location.
ECTOR COUNTY	
Atlantic Oil & Prod. Co.'s No. 1 Holt, 1,980 ft. from N line and 660 ft. from E line of Sec. 19, Blk. A, P.S.L. Sur.	Drlg. 2,852 ft.
Atlantic Oil & Prod. Co.'s No. 2 Holt, 660 ft. from N line and 1,980 ft. from E line of Sec. 19, Blk. A, P.S.L. Sur.	Location.
Atlantic Oil & Prod. Co.'s No. 1 Jones, 2,310 ft. from N line and 440 ft. from W line of Sec. 34, Blk. 43, Twp. 2s, T.&P. Sur.	Standing with csg. cmtd.; T.D. 3,620 ft.
Broderick & Calvert's No. 1 Cowden, 1,980 ft. from S line and 1,980 ft. from N line of Sec. 14, Blk. 43, Twp. 2s, T.&P. Sur.	Drlg. 500 ft.
Continental Oil Co.'s No. 1 Holt, 660 ft. from W and 1,980 ft. from S line of Sec. 20, Blk. A, P.S.L. Sur.	Rig up.
Gilpen et al's No. 1 Blakeney, 330 ft. from S, 440 ft. from E line of Sec. 32, Blk. 43, Twp. 1n, T.&P. Sur.	Drlg. 3,980 ft.
Harrison et al's No. 2 Addis, 990 ft. from N line and 2,200 ft. from W line of Sec. 35, Blk. 43, Twp. 2s, T.&P. Sur.	Flowing est. 5,000,000 ft. gas per day; T.D. 3,836 ft.

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COMPLETIONS IN WEST TEXAS

Pecos County

Mid-Kansas Oil & Gas Co.'s No. 35-A Yates, top pay 1,180 feet, initial production 2,977 bbls. per hour, total depth 1,394 feet.

Ward County

E. E. Sturm's No. 1 Jones, top pay 2,569-95 feet, initial production 75 bbls. flowing per day, total depth 2,595 feet. Texas Pacific Coal & Oil Co.'s No. 8 Jones, top pay 2,285 feet, shot with 100 quarts from 2,430-2,500 feet, initial production 61 bbls. per day, total depth 2,550 feet. Gulf Production Co.'s No. 37 O'Brien, top pay 2,540 feet, initial production 313 bbls. in 12 hours, total depth 2,749 feet.

COMPLETIONS IN PANHANDLE

Gray County

Saulsbury Oil Co.'s No. 1 Carpenter, dry and abandoned, total depth 2,715 feet. Thorp & Dawson's No. 1 Short, shot with 270 quarts from 2,950-3,070 feet, initial production 200 bbls. first 24 hours, total depth 3,081 feet. Phillips Petroleum Co.'s No. 1 Benton, shot with 120 quarts from 3,200-47 feet, initial production 72 bbls. on pump, total depth

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Another Long Lake Test Looks Like Dry Hole; Important Test Under Way in Buffalo Area

By L. E. BREDBERG

DALLAS, Tex., Dec. 18.—Another test in the Long Lake area, southwestern Anderson County, is apparently scheduled to be a dry hole. This test is being drilled by the discoverers of the new Woodbine sand field, Tide Water Oil Co. and Texas Seaboard Oil Co., and is 1,816 feet due west of the producer completed in October of this year. It is now coring at 5,260 feet with only a small porous saturation being logged from 5,228-29½ feet, top of the Woodbine sand correlating around 50 feet lower than the discovery, or at 5,206 feet. Some are placing top at 5,202 feet. Elevation on derrick floor is 231 feet, whereas elevation of No. 1 was 227 feet. With such a dip to the west of the discovery well, which was but a small one, and making some salt water with the oil, this second test looks anything but encouraging at this writing. Humble Oil & Refining Co. recently abandoned a test approximately 2¾ miles to the northwest of the discovery well, and if a major pool is to be found it will evidently have to run in other than to the west or northwest.

Tide Water Oil Co. and Texas Seaboard Oil Co.'s No. 3 Monnig, on the Long Lake block, approximately three-quarters of a mile to the southeast of the discovery well, is now down 2,780 feet in shale. It will be some time before any definite calculations can be made on this test. Top of the Pecan Gap chalk in the discovery well was logged at 3,542 feet, and it will be several days before the third test gets down to this first important marker.

Buffalo Area

The second most important wildcat area in East Texas is the Buffalo or Centerville sector which is being tested by Shell Petroleum Corp. and others who have a unitized block of some 17,500 acres lying between those two towns. This second test is to be completed as a gasser after it failed to make an oil producer on a final test this week. The owners are now endeavoring to pull 5-⅛-inch casing which was cemented prior to making the last test. If they cannot pull it, it will be either ripped or perforated for the purpose of producing the gas at around 5,830-50 feet. The test was drilled to 6,140 feet before being plugged back, casing cemented and test made. It made 5,600,000 feet of gas through a one-half inch choke on tubing, with 1,900 feet casing and 2,000 feet tubing pressure when tested, showing no oil. It is now pinched to eleven-sixteenths inch choke on casing. Enough gas will be produced to drill No. 1 Jones, in the J. F. Summerall Survey, approximately midway between the gas well and No. 1 Phillips in the Swayze Survey, which was drilled several months ago by the same operators, and had several good showings of oil but proved a dry hole.

Location for the fourth test on the block has been staked 1,500 feet from the northwest and southwest lines of the Lee farm and William Cooper Survey, approximately 3 miles to the northeast of No. 1 Phillips dry hole. This is the more interesting of the two new locations in that it will either condemn or prove the area to the northeast. The second test, although it makes an oil producer, cannot prove much territory as it is hedged in between the dry hole on the north and the gasser to the south.

One of the two gas companies operating in this district is expected to connect to the area as there is a need for gas for commercial and domestic consumption in surrounding towns, and the area looks as if it might produce a considerable volume of gas. The Lone Star Gas Co. has drilled a couple of wildcat tests on a block in Limestone, the adjacent county to the northwest, and apparently is desirous of obtaining another supply of gas in this area, consequently is expected to make a bid for the gas from the producers on the Leon County block. The United Gas System also has lines serving towns in the area and may be in the market for such a supply as this newly opened area may produce.

Van Field

There was one location staked in the Van Field by the Pure Oil Co. during the week and one well was completed in the field by that company. One test is rigging up to drill and one other location is waiting derrick. This report shows but little activity in the field which is operated under a unit agreement, Pure Oil Co. developing the joint account for the five companies holding acreage.

Cherokee County

Cranfill & Reynolds' No. 1 Southern Pine Lumber Co. wildcat test, 3 miles southeast of Maydelle, in the Arrington Survey, Cherokee County, is now down 4,800 feet in sandy shale and lime shells. This is one of the more important wildcats now drilling in East Texas, although at the present there is nothing about it to give encouragement to those who hold acreage in the vicinity.

A. R. Lewis and others staked a location on the J. Bradford land in the J. Laprella Survey, Cherokee County, and are moving in material. This will make the third wildcat for the present, although A. F. Richardson's No. 1 P. Wood in the Ignacis Sanches Survey, is only a derrick not having spudded.

Laco Oil Co. abandoned its No. 1 George Pace wildcat in the James B. Atwood Survey, Henderson County, at a total depth of 4,499 feet.

H. C. Jennings and others have a derrick up on the G. E. Davidson farm in the G. Messingill Survey, in Angelina County, one of the southern tier counties of the East Texas district.

The Nacatoch sand test of the Humble Oil & Refining Co. on the J. D. Listenbee farm in the John Goodman Survey, north of the Van Field, Van Zandt County, is shut down at 1,235 feet waiting on power equipment for pumping. It swabbed, pulled tubing and bailed all wash water out of the hole, having about 160 feet of oil in the hole while bailing and making it look good for a small pumper. The company skidded derrick from the Listenbee location over on the Mrs. S. R. Ray farm for another shallow test.

EAST TEXAS FIELD

The engineers for the Texas Railroad Commission held a meeting on December 11 in Kilgore, Tex., and checked bottom hole pressure information collected about one week previous. Their report indicates an average bottom hole pressure on December 5 of about 1,269 pounds. This is a gain of about 13 pounds during the period of 30 days, or from November 5, when the last bottom hole pressure readings were correlated by this group of engineers.

A week or two previous to the last report there was a report that bottom hole pressures were dropping. This was not so, except in a few scattered areas where there was some overproduction and heavy withdrawals which resulted in a decrease in the bottom hole pressures in a few wells in these areas, such as happened in the Gladewater townsite. Taking the field as a whole, average bottom hole pressures have been increasing since Secretary Ickes issued orders against overproduction and interstate shipment of "hot oil" in July. Pressures, a short time before that, had dropped to 1,222 pounds. The newest bottom hole tabulation proves beyond doubt that the field has been benefited by cutting back production, and that the ultimate yield will be much greater under a systematic method of producing, and if oil production is held to a safe allowable.

Shipments of Products

A recapitulation of refined products shipped from East Texas during November show 6,906 cars or 60,243,770 gallons, divided as follows:

Cars	Product—	Gallons
2,440	Gasoline	20,580,659
2,062	Fuel oil	19,320,904
848	Topped crude	7,663,901
661	Gas oil	5,329,782
459	Distillate	3,719,236
249	Casinghead gasoline	2,127,105
168	Kerosene	1,341,560
15	Naphtha	121,667
2	Petroleum residuum	15,663
1	Cracking stock	10,219
1	Refined oil	8,064

Pew and Cranfill-Reynolds Deal

The Pew family of Philadelphia, which controls Sun Oil Co. and Sun Pipe Line Co., but acting independently, purchased approximately 48 per cent of the capital stock of the Cranfill-Reynolds Co. thereby acquiring control. Two dollars and fifty cents per share was offered to the stockholders wishing to sell their stock.

The Cranfill-Reynolds Co. owns 375 full acres in the producing area of the East Texas Field, containing 40 wells. It also holds an interest in several other producing leases in the field. Fifteen hundred barrels of daily prorated oil is being produced on these leases at the present time. The company has about 5,400 bbls. of daily prorated production in Texas and New Mexico, 1,500 bbls. of which is produced in Fisher County, West Texas; 1,500 bbls. on the Gulf Coast, 700 bbls. in New Mexico, and 200 or 300 bbls. in other scattered areas.

The sale insures a larger production to the Sun Oil Co. although it is not taking any of the Cranfill-Reynolds oil in East Texas at present. The Cranfill-Reynolds Co. has an extensive gathering system in the field which will probably be tied into the Sun Pipe Line Co.'s major line in the future, and all connections diverted to the Sun Oil Co.

The Cranfill-Reynolds Co. is to hold a meeting of stockholders at Houston on December 23 at which time the name of the company is to be changed. In the Pew purchase, Tom Cranfill of Dallas disposed of all of his holdings in the company, as did A. H. Richardson. Harry Reynolds

East Central Texas Wildcats

Week Ending December 18

ANDERSON COUNTY

Company, well, farm name, section and block— Remarks:

Standard of Kansas' No. 1 A. W. Johnson, 565 ft. from N line, 420 ft. from E and W lines of 22.8-ac. tract, Simon Sanches Sur. ..... Derrick.

Tide Water Oil Co. and Texas Seaboard Oil Co.'s No. 2 Long Lake Plantation, 1,816 ft. due W of Tide Water and Texas Seaboard Oil Co.'s No. 1 Long Lake, Simon Sanches Sur. ..... Coring 5,260 ft.

Tide Water Oil Co. and Texas Seaboard Oil Co.'s No. 3 Long Lake Plantation, 3,732 ft. S of No. 1, 2,799 ft. E at R/A, Simon Sanches Sur. No. 1 ..... Drlg. 2,780 ft.

ANGELINA COUNTY

H. C. Jennings et al's No. 1 G. E. Davidson, 150 ft. out of SE cor. of Davidson tract, G. Messingill Sur. .... Derrick.

J. M. Seward et al's No. 1 L. J. Dearman, 500 ft. from S and W lines of Dearman S 20-ac. tract, 2½ miles SE of Zavalla, J. T. Peavy Sur. ..... Drlg. 1,720 ft.

BOWIE COUNTY

R. W. Lynn and W. R. Rolfe's No. 1 Mrs. R. D. Hart, 330 ft. out of NE cor. of Hart 20-ac. tract, 1 mile E of Nash, Thomas Price Sur. ..... Location.

CHEROKEECOUNTY

Cranfill & Reynolds' No. 1 Southern Pine Lbr. Co., 330 ft. out of SE cor. of survey, N. Arrington Sur. .... Drlg. 4,320 ft.

A. R. Lewis et al's No. 1 J. Bradford, 1,600 ft. from W line and 200 ft. from N line of 50-ac. tract, J. Laprella Sur. ..... Moving in material.

A. F. Richardson's No. 1 P. Wood, 660 ft. from N line, 3,300 ft. from E line of 498-ac. tract, 14 miles E of Jacksonville, on Cherokee-Rusk County line, Ignacis Sanches Sur. ..... Derrick.

ELLIS COUNTY

Beckham et al's No. 1 L. S. R. Wood, 150 ft. from N line, 330 ft. from E line of Wood 186-ac. tract, A. D. Lagarsa Sur. ..... Derrick.

FRANKLIN COUNTY

Van Emon et al's No. 1 O. S. Maxton, 910 varas W, 910 varas S of NE cor. of survey, John Brown Sur. .... Derrick.

FREESTONE COUNTY

Clyde Creighton's No. 1 Holly Bros., 854 ft. from W and center N and S lines of lease, A.B.&M. Sur. ..... Fishing for drill stem 5,360 ft.

Daniels Oil & Royalty Co.'s No. 1 T. F. Young, 750 varas from W line, 250 varas from S line of survey, L. Liggins Sur. ..... Drlg 2,435 ft.

Hughes et al's No. 1 H. A. Shaw, 330 ft. out of NE cor. of H. A. Shaw 133-ac. tract, Simon Sanches Sur. No. 5 ..... Location.

GREGG COUNTY

Elliott et al's No. 1 Benson, 175 ft. from S line, and center E and W lines of tract, W. P. Chisum Sur. .. Drlg. 300 ft.

J. D. Hall et al's No. 1 Mrs. Gladys Utsman, 5,350 ft. from N line, 6,930 ft. from W line of survey, M. V. Winkle Sur. ..... Fishing 3,598 ft.

Max Rubin's No. 1 Sam Burton, 330 ft. out of NW cor. of 100-ac. lease, D. Sanches Sur. ..... Location.

(Continued on Page 37)

disposed of only half of his stock in the company.

J. Edgar Pew, vice president of the Sun Oil Co., has been serving as a director of Cranfill-Reynolds Co., having held a large amount of stock in the company prior to the present purchase. The stockholders of Cranfill-Reynolds Co. are to elect three members to the board of directors to replace those who have resigned.

Stanolind-Howard Deal

A deal between the Stanolind Oil & Gas Co. and Howard Petroleum Co. has just been consummated, which involves 87 acres of leases and 12 wells. One lease is the 47-acre tract of Mrs. G. Davis in the Painter Survey, and the other a 40-acre lease on the Stuckey-Thrasher farm in the G. W. Hooper Survey, both in Gregg County, and each containing six wells.

The same major company is on a deal to purchase 129 full acres of leases containing 15 wells, from the Columbia Oil & Gas Co. Six different leases are included, all in Gregg County. Part interest in 58 acres in Gregg County is also involved.

There were 85 locations staked in the East Texas Field during the week and completions fell to 77, or 27 under the previous week's number which set a record for the year.

COMPLETIONS IN EAST TEXAS

North Gregg County

Arkansas Fuel Oil Co.'s No. 7 L. D. Allison, top sand 3,588 feet, initial production 73 bbls. in one-half hour through open tubing, total depth 3,614 feet. Almeda Oil Corp.'s No. 4 Doby, top sand 3,711 feet, initial production 40 bbls. in one-half hour through open tubing, total depth 3,745 feet. Atlantic Oil Production Co.'s No. 16 Duncan, top sand 3,602 feet, initial production 90 bbls. per hour through open tubing, total depth 3,678 feet; No. 4-A Tooke, top sand 3,543 feet, initial production 85 bbls. per hour through open tubing, total depth 3,586 feet. Bay Oil Corp.'s No. 6 J. M. Wheeler, top sand 3,605 feet, initial production 100 bbls. per hour through open tubing, total depth 3,635 feet. Deep Rock Oil Co.'s No. 5 B. Jones, top sand 3,612 feet, initial production 85 bbls. per hour through open tubing, total depth 3,643 feet. Empire Gas & Fuel Oil Co.'s No. 9 J. W. Akin, top sand 3,511 feet, initial production 85 bbls. per hour through open tubing, total depth 3,575 feet. Faith Oil Corp.'s No. 5 J. J. Fuller, top sand 3,682 feet, initial production 32 bbls. in one-half hour through open tubing, total depth 3,706 feet. Fritz and others' No. 1 E. E. Anderson, top sand 3,575 feet, initial production 100 bbls. per hour through open tubing, total depth 3,577 feet.

Gulf Production Co.'s No. 49 Judge, top sand 3,553 feet, initial production 75 bbls. per hour through open tubing, total depth 3,558 feet. Humble Oil & Refining Co.'s No. 13 J. F. Bowles, top sand 3,548 feet, initial production 60 bbls. per hour through open tubing, total depth 3,584 feet; No. 6 H. Castleberry, top sand 3,454 feet, initial production 10 bbls. in one-quarter hour through open tubing, total depth 3,517 feet; No. 5 E. W. Clements, top sand 3,516 feet, initial production 18 bbls. in one-quarter hour through open tubing, total depth 3,560 feet. Lester & Duffield's No. 3 J. C. McKinley, top sand 3,560 feet, initial production 18 bbls. in one-quarter hour through open tubing, total depth 3,560 feet.

Long Drilling Co.'s No. 3-A W. W. Owens, top sand 3,643 feet, initial production 150 bbls. per hour through open tubing, total depth 3,659 feet. Magnolia Petroleum Co.'s No. 6 J. H. Beavers, top sand 3,517 feet, initial production 144 bbls. per hour through open tubing, total depth 3,541 feet. Meridian Petroleum Co.'s No. 8 T. W. Lee, top sand 3,611 feet, initial production 100 bbls. per hour through open tubing, total depth 3,616 feet. Rajo Oil Co.'s No. 6 J. C. Barrett, top sand 3,610 feet, initial production 50 bbls. per hour through open tubing, total depth 3,632 feet. Selby Oil & Gas Co.'s No. 8 C. Snavely heirs, top sand 3,575 feet, plugged and abandoned, total depth 3,585 feet; J. R. Crosby Survey.

Shell Petroleum Corp.'s No. 15 Burnside, top sand 3,517 feet, initial production 15 bbls. in one-quarter hour through open tubing, total depth 3,549 feet; No. 4-B Moore, top sand 3,538 feet, initial production 40 bbls. per hour through open tubing, total depth 3,595 feet; No. 13 G. W. Richey, top sand 3,556 feet, initial production 45 bbls. per hour through open tubing, total depth 3,559 feet. Sinclair Prairie Oil Co.'s No. 11-B J. W. Akin, top sand 3,570 feet, initial production 31 bbls. in one-quarter hour through open tubing, total depth 3,625 feet. Stanolind-Simms Oil companies and others' No. 13-C Flewellen, top sand 3,636 feet, initial production 11 bbls. in one-quarter hour through open tubing, total depth 3,705 feet. Sun Oil Co.'s No. 11 Satterwhite, top sand 3,579 feet, initial production 48 bbls. per hour through open tubing, total depth 3,654 feet. Tide Water Oil Co.'s No. 3-C B. Everett, top sand 3,463 feet, initial production 12 bbls. in 10 minutes, total depth 3,480 feet. W. F. Turner's No. 8 A. Jones, top sand 3,624 feet, initial production 95 bbls. per hour through open tubing, total depth 3,684 feet. Yount Lee Oil Co.'s No. 9-A J. D. Davis, top sand 3,593 feet, initial production 58 bbls. per hour through eleven-sixteenths inch tubing choke, total depth 3,596 feet.

South Gregg County

Cranfill & Reynolds' No. 6 L. Howard, top sand 3,520 feet, initial production 15 bbls. in one-quarter hour through open tubing, total depth 3,535 feet. Delta Drilling Co.'s No. 5 M. B. Hughey, top sand 3,534 feet, initial production 60 bbls. per hour through open tubing, total depth 3,558 feet. H. W. Elliott's No. 4 A. Godfrey, top sand 3,564 feet, initial production 30 bbls. in one-quarter hour through open tubing, total depth 3,610 feet. C. P. Greenwood's No. 2 Loughridge, top sand 3,741 feet, initial production 25 bbls. per hour through open tubing, total depth 3,747 feet. T. A. Johnson's No. 6-B M. T. Cole, top sand 3,510 feet, initial production 72 bbls. per hour through open tubing, total depth 3,534 feet. John Mabee's No. 14 M. T. Cole, top sand 3,516 feet, initial production 100 bbls. per hour through open tubing, total depth 3,539 feet. John Mabee's No. 15 M. T. Cole, top sand 3,521 feet, initial production 110 bbls. in 40 minutes through open tubing, total depth 3,536 feet. Magnolia Petroleum Co.'s No. 5 L. Andrews, top sand 3,610 feet, initial production 112 bbls. per hour through open tubing, total depth 3,624 feet. Milford Petroleum Co.'s No. 2 W. S. Smith, top sand 3,534 feet, initial production 11 bbls. in five minutes through open tubing, total depth 3,570 feet.

Rhoads Drilling Co.'s No. 22 Sabine River, top sand 3,512 feet, initial production 50 bbls. in one-half hour through open tubing, total depth 3,534 feet. T. L. James & Co.'s No. 6 Sabine River, top sand 3,570 feet, initial production 100 bbls. per hour through open tubing, total depth 3,573 feet. Sun Oil Co.'s No. 11 William Penticost, top sand 3,594 feet, initial production 78 bbls. per hour through open tubing, total depth 3,629 feet. Titan Oil Co.'s No. 3 C. M. Dickson, top sand 3,541 feet, initial production 12½ bbls. in one-half hour through open tubing, total depth 3,575 feet.

North Rusk County

Bowles Oil Co.'s No. 6 Dick Wells, top sand 3,678 feet, initial production 75 bbls. per hour through open tubing, total depth 3,700 feet. East Texas Oil & Refining Co.'s No. 8 A. Givens, top sand 3,659 feet, initial production 100 bbls. per hour through open tubing, total depth 3,682 feet. Humble Oil & Refining Co.'s No. 88 L. D. Crim, top sand 3,629 feet, initial production 75 bbls. through three-quarters inch tubing choke, total depth 3,657 feet; No. 106 L. D. Crim, top sand 3,616 feet, initial production 112 bbls. per hour through open tubing, total depth 3,646 feet; No. 107 L. D. Crim, top sand 3,601 feet, initial production 112 bbls. per hour through open tubing, total depth 3,603 feet; No. 25-A S. S. Laird, top sand 3,660 feet, initial production 94 bbls. per hour through open tubing, total depth 3,707 feet. Eddie Jones' No. 5 Hindman, top sand 3,657 feet, initial production 100 bbls. per hour through open tubing, total depth 3,668 feet.

Rubin and Nadel's No. 3 D. Wills, top sand 3,681 feet, initial production 75 bbls. per hour through open tubing, total depth 3,628 feet. Snowden and McSweeney's No. 6 F. Bean, top sand 3,587 feet, initial production 35 bbls. in one-half hour through open tubing, total depth 3,612 feet. Tide Water Oil Co.'s No. 9 H. P. Leverett, top sand 3,655 feet, initial production 35 bbls. in one-half hour through open tubing, total depth 3,684 feet. Wheelock and Collins' No. 8 Dick Wells, top sand 3,701 feet, initial production 75 bbls. per hour through open tubing, total depth 3,715 feet.

South Rusk County

Amerada Petroleum Corp.'s No. 16 T. J. Stovall, top sand 3,618 feet, initial production 85 bbls. per hour through open tubing, total depth 3,650 feet. Combined Oil Interest's No. 17 G. W. Eaton, top sand 3,737 feet, initial production 54 bbls. per hour through open tubing, total depth 3,747 feet. Goodnight and Donald's No. 1 Neal, top sand 3,708 feet, initial production 350 bbls. per hour through open tubing, total depth 3,801 feet. George Greer's No. 2 R. P. Brambling, top sand 3,607 feet, initial production 13 bbls. in 10 minutes through open tubing, total depth 3,741 feet. Hunt Production Co.'s No. 9-D Bradford, top sand 3,548 feet, initial production 20 bbls. in three hours pumping, total depth 3,638 feet. McMahon and McCullough's No. 7 Joe Lee, top sand 3,659 feet, initial production 35 bbls. per hour through open tubing, total depth 3,663 feet. J. E. Mabee's No. 6 W. P. Brett, top sand 3,683 feet, initial production 110 bbls. in 40 minutes through open tubing, total depth 3,711 feet.

Mid-Kansas Oil & Gas Co.'s No. 16 H. C. and G. W. Burton, top sand 3,610 feet, initial production 80 bbls. per hour through open tubing, total depth 3,638 feet; No. 66 M. M. Cross, top sand 3,604 feet, initial production 68 bbls. through one-half inch tubing choke per hour, total depth 3,616 feet; No. 17 S. H. Moores, top sand 3,624 feet, initial production 76 bbls. per hour through open tubing, total depth 3,693 feet. Spansco Oil Co.'s No. 6 W. P. Brett, top sand 3,697 feet, initial production 20 bbls. in one-quarter hour through open tubing, total depth 3,737 feet. Stanolind and Pure Oil companies' No. 22 Moores, top sand 3,612 feet, initial production 26 bbls. in 17 minutes through open tubing, total depth 3,619 feet; No. 23 Moores, top sand 3,610 feet, initial production 26 bbls. in 18 minutes through open tubing, total depth 3,616 feet; No. 42 W. H. Siler, top sand 3,642 feet, initial production swabbed 20 bbls. in four hours, showed salt water with little oil, dry and abandoned, total depth 3,648 feet; J. Hemby Survey. Tress Oil Co.'s No. 2 W. M. Camp, top sand 3,525 feet, initial production 20 bbls. in eight hours pumping, total depth 3,625 feet.

Smith County

Arcadia Refining Co.'s No. 2-B J. R. Green, top sand 3,802 feet, initial production 80 bbls. per hour through open tubing, total depth 3,805 feet. Barney Cockburn's No. 1 L. Jackson and Atterbery, top sand 3,837 feet, initial production 40 bbls. in three hours pumping, total depth 3,838 feet. J. R. Gaskey's No. 1 F. Cole, top sand 3,796 feet, initial production 75 bbls. per hour through open tubing, total depth 3,797 feet.

Upshur County

C. H. Brown and others' No. 1 Willie Starr, top sand 3,609 feet, initial production 417 bbls. per hour through open tubing, total depth 3,617 feet. Chatam Oil Co.'s No. 5 H. Fenton, top sand 3,744 feet, initial production 50 bbls. per hour through open tubing, total depth 3,758 feet. B. F. Phillips' No. 1 fee, top sand 3,673 feet, abandoned, 60 per cent water, total depth 3,718 feet. Simms & Buttram's No. 15 Nicholson, top sand 3,635 feet, initial production 22½ bbls. in one-quarter hour through open tubing, total depth 3,640 feet. Steen Drilling Co.'s No. 6 J. F. Phillips, top sand 3,712 feet, initial production 75 bbls. per hour through open tubing, total depth 3,722 feet. Stroube & Stroube's No. 10 R. J. Mackey, top sand 3,629 feet, initial production 65 bbls. per hour through open tubing, total depth 3,635 feet.

WILDCAT COMPLETIONS

Henderson County

Laco Oil Co.'s No. 1 George Pace, top Pecan Gap 2,480 feet, base 3,576 feet, top Austin chalk 3,514 feet, base 3,925 feet, top Woodbine sand 4,285 feet, top red beds 4,335 feet, dry and abandoned, total depth 4,499 feet; James B. Atwood Survey; elevation 407 feet.

Morris County

Burkhalter Tucker and others' No. 1 Staggers (old well drilled deeper, formerly completed with total depth of 3,679 feet), dry and abandoned at 3,756 feet; J. D. Nelson Survey; elevation 353 feet.

Van Field—Van Zandt County

Pure Oil Co.'s No. 6 A. W. Ellison, initial production 78 bbls. first 24 hours after choked for proration, total depth 2,950 feet.

West Texas Fields

(Continued from Page 34)

3,253 feet. Southern Petroleum Exploration Co.'s No. 2 Baird, shot with 240 quarts from 3,200-69 feet, initial production 178 bbls. on pump, total depth 3,269 feet.

Hutchinson County

Huber Petroleum Co.'s No. 2 M. E. Dunnaway, gas pay 2,255-2,600 feet, initial production 21,000,000 feet of gas, total depth 2,600 feet. Sinclair Prairie Oil Co.'s No. 44 Johnson (old well drilled deeper), increase in pay from 2,925-29 feet, initial production 510 bbls. of oil and 10 bbls. of water, total depth 2,929 feet.

Wheeler County

Ward & Delaney's No. 1 Sitter, total depth 2,813 feet, plugged back to 2,375 feet, initial production 60,000,000 feet of gas.

COMPLETIONS IN NORTH TEXAS

Archer County

Achnig & Egger's No. 1 W. P. Ferguson, dry and abandoned, total depth 652 feet. Bridwell Oil Co.'s No. 24 Oil Investment Co., oil sand 422-27 feet, initial production 15 bbls., total depth 427 feet. W. T. Hutchinson's No. 1 Andrews, oil sand 1,063-69½ feet, initial production 22 bbls. of oil and 9 bbls. of salt water, total depth 1,069½ feet. Sutherland & Gray's No. 1 Ferguson, dry and abandoned, total depth 667 feet.

C. W. Boller's No. 3 Perkins, sandy lime 1,417-31 feet, treated with acid, initial production 150 bbls. of oil, total depth 1,431½ feet. Bonner Oil Co.'s No. 4 M. B. Ray, oil sand 1,123-27 feet, initial production 125 bbls., total depth 1,127 feet. Continental Oil Co.'s No. 4 Falls County School Lands, sandy lime 1,121-36 feet, treated with acid, initial production 107 bbls. second 24 hours, total depth 1,135 feet; No. 2 Falls County School Lands, sandy lime 1,098-1,105 feet, initial production 125 bbls., total depth 1,106 feet. Continental and Cullum's No. 11 Falls County School Lands, sandy lime 1,112-29 feet, initial production 200 bbls. of oil after acid treatment, total depth 1,129 feet. Fain & McGaha's No. 1 Parkey, dry and abandoned, total depth 1,575 feet. Jack Grace's No. 3 Andrews, oil sand 956-58 feet, initial production 40 bbls., total depth 958 feet.

W. B. Hamilton's No. 22 Abercrombie, sandy lime 1,154-70 feet, treated with acid, initial production 55 bbls. first 24 hours, total depth 1,170 feet; No. 9 Winfield-Ikard, sandy lime 1,141½-51

feet, initial production 174 bbls., total depth 1,151½ feet. Humble Oil & Refining Co.'s No. 5 Hamilton, oil sand 1,110½-51½ feet, initial production 55 bbls., total depth 1,151½ feet. King Royalty Co.'s No. 2 Abercrombie, sandy lime 1,163-71½ feet, initial production 25 bbls., total depth 1,173 feet. A. P. Louri's No. 1 Montgomery, oil sand 1,120-22 feet, initial production 4 bbls. of oil and 5 bbls. of water, total depth 1,122 feet. A. C. Park's No. 1 Owens, dry and abandoned, total depth 710 feet. Perkins & Cullum's No. 2 Falls-Boyles, sandy lime 1,151-71½ feet, initial production 235 bbls.. total depth 1,151 feet.

Perkins and Cullum's No. 3 Falls-Boyles, sandy lime 1,100-10 feet, initial production 65 bbls., total depth 1,116 feet; No. 4 Falls-Boyles, dry and abandoned, total depth 1,150 feet. G. R. Ridgeway's No. 1 Wilson, dry and abandoned, total depth 1,292 feet. Sinclair Prairie Oil Co.'s No. 5 Falls-Boyles, dry and abandoned, total depth 1,140 feet. S. V. White's No. 1 J. E. Koller, dry and abandoned, total depth 1,501 feet.

Clay County

J. E. Keller's No. 2 George, dry and abandoned, total depth 1,267 feet.

Jack County

F. H. E. Oil Co.'s No. 3 Gillespie, oil sand 523-28 feet, initial production 20 bbls., total depth 528 feet. L. J. Jeff's No. 1 J. N. Box, oil sand 2,812-40 feet, initial production 25 bbls., total depth 2,907 feet.

Montague County

Bridwell Oil Co.'s No. 1 Bigley, black lime 1,734-75 feet, initial production 25 bbls. of oil, total depth 1,802 feet. Texas Co.'s No. 3 Cunningham, oil sand 932-45 feet, initial production 18 bbls., total depth 945 feet.

Wilbarger County

John O'Neil's No. 1 S. H. Fields, dry and abandoned, total depth 1,080 feet.

Young County

F. Ard, Jr.'s No. 5 Belknap, dry and abandoned, total depth 710 feet. James B. Baker, Jr.'s No. 2 Smith, dry and abandoned, total depth 778 feet. J. D. Dillard's No. 1 Newman, dry and abandoned, total depth 565 feet. R. P. Dorian and others' No. 1 Hennig, dry and abandoned, total depth 1,175 feet. F. H. E. Oil Co.'s No. 1 Mahler, dry and abandoned, total depth 543 feet. Iron Mountain Oil Co.'s No. 3 Jordan, oil sand 643-54 feet, initial production 10 bbls., total depth 654 feet. Maer and Hamilton's No. 6 Jeffery, oil sand 827-36 feet, initial production 100 bbls., total depth 836 feet. W. R. Stafford's No. 1 L. R. Drum, dry and abandoned, total depth 540 feet. Wheeler and Brashear's No. 1 Jeffery, dry and abandoned, total depth 823 feet. White and Duncan's No. 8 Smith, dry and abandoned, total depth 730 feet. Wooten and Reed's No. 7 Henson, oil sand 830-36 feet, initial production 15 bbls. of oil and 2 bbls. of water, total depth 836 feet, plugged back to 835 feet. W. C. Young's No. 1 Newman, dry and abandoned, total depth 503 feet.

Wichita County

G. W. Cooper's No. 25 Waggoner Brothers, oil sand 1,301-26 feet, initial production 50 bbls., total depth 1,326 feet.

Better Times Seen by Standard Oil Co. (N. J.)

(Continued from Page 14)

be turned into gasoline in foreign plants and consumed abroad, instead of coming to the United States for refining and export. Total consumption of motor fuel, both domestic and export, promises to show up but a negligible amount under 1932.

From January to August the industry was able to scale down its stocks of motor fuel below figures of the same period last year. During the main consuming season, however, the reduction was very slight and in September and October additions to stocks were considerably greater than usual for those months, so that the improvement of the first eight months was wiped out and the industry now finds itself with more gasoline in storage than in 1932. Happily, the recent curtailment of refinery runs has had a beneficial effect. If orders of the oil administrator, which call for gasoline stocks of 51,000,000 bbls. (not including natural gasoline) by December 31, are carried out, stocks at the end of the year should be only 700,000 bbls. higher than at the close of 1932.

All things considered, the industry will start the new year with a better foundation for recovery than it has had for many years.

East Central Texas Wildcats

(Continued from Page 35)

Paul T. Rutledge's No. 1 M. T. Cole, 1,081 ft. S, 372 ft. E of NE cor. of Tice Water's Lacy lease, M. T. Cole Sur. ..... Derrick.

Teton Oil Co.'s No. 1 E. Stell et al, 330 ft. from N line, 50 ft. from W line of 119.92-ac. tract, John Wilkerson Sur. ..... Derrick.

HENDERSON COUNTY

Campbell and Champlin's No. 1 R. S. Ansley, 108 varas S, 623 varas W of NE cor. of lease, 6 miles SE of Buffalo, N. H. Thompson Sur. ..... Derrick.

HOPKINS COUNTY

Hager et al's No. 1 W. A. Irwin, 2,345 ft. from W line, 190 ft. from N line of survey, T. Belt Sur. ..... Coring 3,617 ft.

HUNT COUNTY

Meade and McKennie's No. 1 Love, 300 ft. from N line, 6,300 ft. from W line of 95-ac. tract, John Gilisky Sur. ..... Rig up.

LEON COUNTY

Cooper et al's No. 1 W. H. Cozart, 1,000 ft. from SE cor. of 266-ac. tract in SW part of county, Thomas Gardner Sur. ..... Derrick.

Shell Pet. Corp.'s No. 1 Beggs, center of 123.5-ac. tract, John Carter Sur. ..... T.D. 6,140 ft.; plugged back to 5,852 ft.; made 5,600,000 ft. of gas on ½-in. choke on tubing; no oil; will complete as gas well.

Shell Petroleum Corp.'s No. 1 J. N. Jones, 800 ft. from N line of survey and 1,000 ft. from E line of survey, J. F. Summeralls Sur. ..... Bldg. derrick.

Shell Petroleum Corp.'s No. 1 Lee, 1,500 ft. from NW and SW line of farm and survey, William Cooper Sur. ..... Location.

R. L. Smith's No. 1 W. P. Simpson, 1,320 ft. from S and E lines of survey, Alfred Penn Sur. No. 693 ... Rig up.

Standard Oil Co. of Kansas' No. 1 A. W. Johnson, 466 ft. from NE line, 466 ft. from NW line of 100-ac. tract, Simon Sanches Sur. No. 7 ..... Location.

Sutton and Hawkins' No. 1 F. C. Wilson, 300 ft. out of NW cor. of Wilson 55-ac. tract, A. Ogden Sur... Spudded and S.D.

LIMESTONE COUNTY

C. M. Joiner et al's No. 1 S. A. Knapp, 1,000 ft. from N and W lines of tract and survey, 1¼ miles N of Falls County line, Luke Moore Sur. ..... Drlg. 400 ft.

Lone Star Gas Co.'s No. 3 Barron, 1,853 ft. from W line, 1,390 ft. from N line of survey, E. Mabrey Sur. .... S.D. 1,640 ft.

MORRIS COUNTY

Buchanan et al's No. 2 Staggers, 150 ft. from W line, 500 ft. from S line of survey, 8 miles NW of Daingerfield, John D. Nelson Sur. ..... Derrick.

NAVARRO COUNTY

H. T. Brasselton et al's No. 1 H. L. Albritton, 150 ft. out of NW cor. of 100-ac. tract, 1½ miles E of Roane. Drlg. 1,155 ft.

RAINES COUNTY

J. W. Hallsell et al's No. 1 P. F. Jones, 400 ft. out of SW cor. of 22-ac. tract, 2½ miles S of Alba, B.B. B.&C. Sur. ..... Derrick.

RUSK COUNTY

Merrick et al's No. 1 D. C. Joiner, 6,500 ft. from N line, 2,780 ft. from W line of survey, F. Cordova Sur.. Waiting on cmt. to set; T.D. 3,734 ft.

Pansy Oil Co.'s No. 1 W. H. Frederick, 600 ft. from N line, 4,800 ft. from W line of survey, Ximines Sur. .. Waiting on standard rig; T.D. 3,672 ft.

UPSHUR COUNTY

Cranfill & Reynolds' No. 1 C. T. Crosby, 660 ft. from S and E lines of 190-ac. tract, 4,000 ft. E of Cranfill & Reynolds' No. 1 Rash, P. L. Clawer Sur. ..... T.D. 3,768 ft.; tested salt water; plugged back to 3,733 ft.

C. H. Lyons et al's No. 1 E. H. Crosbie, 330 ft. out of SE cor. of lease and survey, C. Witcher Sur. ..... Swabbing; flowing little by heads; T.D. 3,711 ft.

Mansell et al's No. 1 C. B. Mackey, 2,430 ft. from N line, 3,340 ft. from E line of survey, J. M. Pineda Sur. ..... Drlg. 2,840 ft.

B. F. Phillips' No. 1 Lad Johnson, 900 ft. from S line and 335 ft. from E line of lease, W. R. Stevens Sur. ..... Rig up.

VAN ZANDT COUNTY

Gray and Williams et al's No. 1 Paschall, 590 ft. from E line, 200 ft. from N line of 39-ac. tract, 5 miles NW of Jackson, D. Y'Barbo Sur. ..... Set surface csg. 88 ft.

J. O. Griffith's No. 1 Bruce & Gibbard, 1,000 ft. from S line, 330 ft. from E line of 134-ac. tract, G. Martinez Sur. ..... Drlg. 63 ft.

Humble O. & R. Co.'s No. 1 J. D. Listenbee, 150 ft. out of SW cor. of W 15 acres of 30-ac. tract, John Goodman Sur. ..... 160 ft. oil in hole while bailing; waiting on pumping equipment; T.D. 1,235 ft.

Humble O. & R. Co.'s No. 1 S. R. Ray, 200 ft. S, 160 ft. W of J. D. Listenbee 30-ac. lease in Nacogdoches County School Lands Sur. ..... Derrick.

Pure Oil Co.'s No. 9 N. E. Clark, 730 ft. N of S line and 200 ft. E of W line of N. E. Clark and J. R. Houston 94.5-ac. tract, W. N. Black Sur. ..... Rigging up.

Pure Oil Co.'s No. 9 W. F. Swain, 300 ft. S of N line and 450 ft. E of W line of W. F. Swain 40-ac. tract, John Walling Sur. ..... Location.

Ray Drlg. Co.'s No. 1 J. W. Mallory, 1,150 ft. from S line, 150 ft. from W line of 217-ac. tract, John Walling Sur. ..... Derrick.

Wildcat Operations in West Texas

(Continued from Page 34)

Harrison et al's No. 3 Addis, 1,650 ft. from N line and 2,200 ft. from W line of Sec. 35, Blk. 43, Twp. 2s, T.&P. Sur. ..... Location.

Skelly Oil Co.'s No. 1 Addis, 990 ft. from N line and 2,200 ft. from E line of Sec. 35, Blk. 43, Twp. 2s, T.&P.R.R. Sur. ..... Prepare to deepen; T.D. 3,750 ft.

Fred Turner's No. 1-B F. V. Addis, 440 ft. from the E line and 330 ft. from S line of Sec. 35, T.&P.R.R. Sur., Blk. 43, Twp. 2s ..... Flowed 320 bbls. first 24 hrs. after shot; T.D. 4,073 ft.

Fred Turner's No. 2-A Addis, 2,310 ft. from N and 440 ft. from E of Sec. 35, Blk. 43, Twp. 2s, T.&P. Sur. ... Drlg. water well.

FISHER COUNTY

Condor Pet. Co.'s No. 1 Holley, 1,170 ft. W and 660 ft. from N lines of E half, Sec. 4, Blk. R, W. E. Richardson Sur. ..... Moving in material and S.D.

Cranfill & Reynolds' No. 3 J. H. Young, 330 ft. W and 330 ft. S of NE cor. of survey, Sec. 208, B.B.B.&C. Sur. ..... Derrick.

Merry Bros. and Perini's No. 1 J. J. Steele, 330 ft. E and 150 ft. N of SW cor. NE Sec. 210, B.B.B.&C. R.R. Sur. ..... Drlg. 1,803 ft.

Mid-Continent Petroleum Corp.'s No. 2 Pardue, 673 ft. from N and 330 ft. from E line of Sec. 202, B.B.B. &C. Sur., Blk. 1 ..... Drlg. 1,400 ft.

Roeser and Hill's No. 1 Hill, 661 ft. from N and 330 ft. from E line of NW of Sec. 193, B.B.B.&C. Sur., Blk. 1 ..... Setting csg.; T.D. 1,225 ft.

Southern's No. 1 King, 660 ft. from N and 330 ft. from W line of SW Sec. 193, B.B.B.&C. Sur. ..... Crooked hole; will skid over; T.D. 1,107 ft.

Southern Oil Co.'s No. 1-A Pardue, 1,310 ft. from S and 990 ft. from E lines of Sec. 202, B.B.B.&C. Sur. ..... Fishing 2,715 ft.

GAINES COUNTY

R. H. Gill et al's No. 1 Crews, 1,320 ft. from S and 1,320 ft. from W line of Sec. 9, Blk. A-20, P.S.L. Sur... Spudding.

GLASSCOCK COUNTY

Continental Oil Co.'s No. 1 Gilbreath, 330 ft. from N line and 1,980 ft. from E line of Sec. 24, Blk. 33, Twp. 2s, T.&P.R.R. Sur. ..... Drlg. 1,260 ft.

Humble Oil & Ref. Co.'s No. 3 Arrington, 330 ft. from N line and 330 ft. from E line of Sec. 21, Blk. 33, Twp. 2s, T.&P. Sur. ..... Running tubing; 1,100 feet of oil in the hole; T.D. 2,281 ft.

Lawson et al's No. 1-C Edwards, 1,359 ft. from E and 1,323 ft. from S line of Sec. 16, Blk. 33, Twp. 2s, T.&P. Sur. ..... Drlg. 400 ft.

Noble Drlg. Co.'s No. 2 Baker, 330 ft. from N line and 330 ft. from E line of Sec. 22, Blk. 33, Twp. 2s, T.&P. Sur. ..... Will treat with acid; T.D. 2,182 ft.

Simms Oil Co.'s No. 3-A Coffee, 330 ft. from S line and 1,650 ft. from W line of Sec. 15, Blk. 33, Twp. 2s, T.&P.R.R. Sur. ..... Waiting on cmt. to set; T.D. 2,090 ft.

HOWARD COUNTY

L. C. Harrison et al's No. 2 Texas Land & Mortgage Co., 2,310 ft. from E line and 330 ft. from the S line of Sec. 4, T.&P.R.R. Sur., Blk. 30, Twp. 1s ..... Location.

Merrick & Lamb's No. 9 Chalk, 330 ft. from E line and 330 ft. from S line of lease, Sec. 125, Blk. 29, W.&N.W. Sur. ..... Drlg. 900 ft.

Plymouth Oil Co.'s No. 9 Kloh et al, 2,640 ft. from the N. line and 1,980 ft. from W line of Sec. 6, Blk. 32, T.&P.R.R. Sur., Twp. 2s ..... Waiting on cmt. to set 2,500 ft.

Schermerhorn Oil Co.'s No. 1 Kloh, Sec. 3, Blk. 32, Twp. 2s, T.&P. Sur. ..... Waiting on proration gauge; T.D. 2,500 ft.

Joe Rusk et al's No. 2 G. M. Dodge Estate, 330 ft. from N line and 2,310 ft. from the E line of Sec. 9, H.&T.C.R.R. Sur., Blk. 30, Twp. 2s ..... Drlg. 340 ft.

Sinclair Prairie Oil Co.'s No. 9 Dodge, 310 ft. from N line and 1,635 ft. from W line of Sec. 11, Blk. 30, Twp. 1s, T.&P.R.R. Sur. ..... Drlg. 2,770 ft.

Southern Oil Co.'s No. 1 Denman, 2,310 ft. from N line and 330 ft. from W line of Sec. 10, Blk. 30, Twp. 1s, T.&P.R.R. Sur. ..... Drlg. 915 ft.

Ungren & Frazier's No. 1 Davis, 330 ft. from S line and 990 ft. from W line of Sec. 3, Blk. 30, Twp. 1s, T.&P. Sur. ..... S.D. 2,367 ft.

IRION COUNTY

Williams-Short's No. 1 Gentry, 1,200 ft. from N line and 1,080 ft. from W line of Sec. 1, Blk. 3, H.&T.C. Sur... Drlg. 545 ft.

JONES COUNTY

Dyer's No. 1 Odom, 200 ft. from S and 170 ft. from W of N 320 acres, G. Zumwalt Sur. ..... Drlg. 410 ft.

Jack Roberts' No. 2 Swann, 2,300 ft. from N and 1,600 ft. W of SE cor. of I. Milley Sur. ..... Drlg. 316 ft.

LOVING COUNTY

R. L. Allen's No. 1 fee, 4,290 ft. from NE line, 330 ft. from SE line, Sec. 32, H.&T.C. Sur. ..... Location.
R. L. Allen's No. 2 fee, 4,290 ft. from NE line, 990 ft. from SE line, Sec. 32, Blk. 33, H.&T.C. Sur. ..... Location.
R. L. Allen's No. 3 fee, 4,290 ft. from NE line, 990 ft. from NW line, Sec. 32, Blk. 33, H.&T.C. Sur. ..... Location.
R. L. Allen's No. 4 fee, 4,290 ft. from NE line, 330 ft. from NW line, Sec. 32, Blk. 33, H.&T.C. Sur. ..... Location.
Eppenauer Drlg. Co.'s No. 1-C Allen, 330 ft. from NW line, 2,310 ft. from SW line, Sec. 90, Blk. 1, W.&NW Sur. ..... Waiting on cmt. to set; T.D. 4,115 ft.
Eppenauer Drlg. Co.'s No. 1-A Victor, 330 ft. from SW and 330 ft. from SE of NW of N half Sec. 4, Blk. 2, W.&N.W. Sur. ..... Rigging up standard tools
Sinclair Prairie Oil Co.'s No. 1 Allen, 330 ft. from SE lines and 990 ft. from SW lines of Sec. 4, Blk. 2, W.&N.W. Sur. ..... Drlg. 815 ft.
Sinclair Prairie Oil Co.'s No. 2 Bell, 410 ft. from SE and 1,625 ft. from NE of Sec. 91, Blk. 1, W.&N.W. Sur. ..... Digging cellar.

PECOS COUNTY

M. B. Black et al's No. 1 E. E. Powell et al, 150 ft. from NE line and 150 ft. from SE line of Sec. 102, H.&G.M.R.R. Sur., Blk. 10 ..... S.D. 972 ft.
California Oil Co.'s No. 1 Reid, 1,987 ft. S and 495 ft. W from the NW cor. of Sec. 61, Blk. 1, L.&G.N. Sur. ..... Drlg. 1,200 ft.
California Oil Co.'s No. 23 Yates, 215 ft. W of No. 1 Reid, Sec. 94, Blk. 194, G.C.&S.F. Sur. ..... Rig up.
Culberson Bros.'s No. 16-B Monroe, 725 ft. from N line and 1,560 ft. from E line of Sec. 39, Blk. 194, G.C.&S.F.R.R. Sur. ..... Location.
Easter & McCurdy's No. 3-A Shell-Smith, 875 ft. N of Shell Pet. Corp.'s No. 7-A Smith, Sec. 27, Blk. 194, G.C.&S.F. Sur. ..... Set csg. at 800 ft.
Humble Oil & Refining Co.'s No. 1 White, Baker, 1,320 ft. from N and E lines of Sec. 44, Blk. Z, T.C. Sur. ..... Drlg. 6,666 ft.
Kemper & Kimberlin et al's No. 2 D. B. Gregg et al, 2,490 ft. from NW line and 1,470 ft. from NE line of Sec. 101, H.&G.M.R.R. Co. Sur., Blk. 10 ..... S.D. 156 ft.
Mid-Kansas Oil & Gas Co.'s No. 10 Smith, 150 ft. from N line and 250 ft. from E line of Sec. 31, Blk. 194, G.C.&S.F. Sur. ..... Location.
Mid-Kansas O. & G. Co.'s No. 18 Smith-Taylor, 1,296 ft. from S line, 1,390 ft. from W line, Sec. 33, G. C.&S.F. Sur., Blk. 194 ..... Location.
Mid-Kansas Oil & Gas Co.'s No. 22 Smith-Taylor, 350 ft. from S line and 324 ft. from W line of NW cor. of Fred Turner, Jr., Sur. No. 2, but located in Sec. 33, Blk. 194, G.C.&S.F. Sur. ..... Jarring on tools; T.D. 1,400 ft.
Mid-Kansas Oil & Gas Co.'s No. 24 Smith-Taylor, 250 ft. W of S half of Turner Tract No. 1, Sec. 33, Blk. 194, G.C.&S.F. Sur. ..... Bldg. road.
Mid-Kansas Oil & Gas Co.'s No. 25 Smith-Taylor, 344 ft. W of SE cor. of S half of Turner Tract No. 1, Sec. 33 ..... Location.
Mid-Kansas Oil & Gas Co.'s No. 26 Smith-Taylor, 395 ft. S and 344 ft. E of SE cor. of S half of Tract No. 1 ..... Location.
Mid-Kansas Oil & Gas Co.'s No. 1 Turner, 1,312 ft. from N line and 250 ft. from W line of Turner Sur. No. 3.. Running csg. 810 ft.
Mid-Kansas Oil & Gas Co.'s No. 1 Turner, 250 ft. from N line and 250 ft. from W line of Turner Sur. No. 3.. Location.
Mid-Kansas Oil & Gas Co.'s No. 3 Turner, 739 ft. from N and 209 ft. from W line of Turner Sur. No. 4 .... Location.
Mid-Kansas Oil & Gas Co.'s No. 3 Fred Turner, 525 ft. from S line and 500 ft. from W line of Tract No. 2.. Bldg. road.
Mid-Kansas Oil & Gas Co.'s No. 6 Fred Turner, 250 ft. from W line and 625 ft. from S line of Tract No. 1.. Rig up.
Mid-Kansas Oil & Gas Co.'s No. 7 Turner, 395 ft. from S line and 344 ft. from E line of Tract No. 1 ..... Drlg. 410 ft.
Mid-Kansas Oil & Gas Co.'s No. 8 Fred Turner, 204 ft. S and 55 ft. W of the most northerly NW cor. of I. G. Yates Sur. A-8,195, but in Fred Turner, Jr., Survey, Tract No. 1 ..... Digging cellar.
Mid-Kansas Oil & Gas Co.'s No. 11-E Yates, 481 ft. from N line and 250 ft. from E line of Sec. 32, Blk. 194, G.C.&S.F. Sur. ..... Waiting on cmt. to set; T.D. 1,395 ft.
Mid-Kansas Oil & Gas Co.'s No. 12-H Yates, 408 ft. S of N line of Sec. 33 and 344 ft. W of SE cor. of S half of Tract No. 1 ..... Location.
Mid-Kansas Oil & Gas Co.'s No. 13-H Yates, 408 ft. S of N line of Sec. 33 and 344 ft. E of SE cor. of S half of Tract No. 1 ..... Location.
Mid-Kansas Oil & Gas Co.'s No. 36-A Yates, 250 ft. N and 324 ft. W from the NW cor. of Turner Tract No. 2 in Sec. 34½, I.G. Yates Sur. ..... Clearing location.
Mid-Kansas Oil & Gas Co.'s No. 37-A Yates, 250 ft. N and 321 ft. E of NW cor. of the Turner Tract No. 3 in Sec. 34½, I. G. Yates Sur. ..... Drlg. 1,375 ft.
Mid-Kansas Oil & Gas Co.'s No. 38-A Yates, 250 ft. E and 305 ft. S from the NE cor. of Turner Tract No. 3 in Sec. 34½, I. G. Yates Sur. ..... Location.
Mid-Kansas Oil & Gas Co.'s No. 39-A Yates, 150 ft. N and 350 ft. W of the NW cor. of Turner Tract No. 4 in Sec. 34½, I. G. Yates Sur. ..... Location.
Mid-Kansas Oil & Gas Co.'s No. 40-A Yates, 344 ft. from E line and 395 ft. from N of SE cor. of S half of Turner Tract No. 1 ..... Preparing to spud.
Mid-Kansas Oil & Gas Co.'s No. 41 I. G. Yates, 480 ft. W and 204 ft. S of the most northerly NE cor. of I. G. Yates Sur. A-8,195 ..... Rig up.
Mid-Kansas Oil & Gas Co.'s No. 42 I. G. Yates, 204 ft. S and 55 ft. E of the most northerly NW cor. of I. G. Yates Sur. A-8,195 ..... Clearing location.

REAGAN COUNTY

Big Lake Oil Co.'s No. 12-C University, 938 ft. from N, 740 ft. from E line of Sec. 13, Blk. 3, University land ..... Drlg. 8,782 ft.
Big Lake Oil Co.'s No. 14-C University, 735 ft. from S line and 2,730 ft. from E line of Sec. 35, Blk. 9, University Land Sur. ..... Drlg. 4,961 ft.
Big Lake Oil Co.'s No. 15-C University, 660 ft. from E line and 660 ft. from S line of Sec. 35, Blk. 9, University Land Sur. ..... Rig up.
Continental Oil Co.'s No. 9-B University, 1,980 ft. from S line, 1,895 ft. W of E line of Sec. 39, Blk. 9, University Land Sur. ..... Plugged back to 8,692 ft. from 8,850 ft.; treating with acid; T.D. 8,850 ft.
Group Oil Co.'s No. 10-B University, 1,980 ft. from N and 1,895 ft. from E line, Sec. 36, Blk. 9 ..... Cellar.
Snyder et al's No. 1 Hughes, 1,320 ft. from N and W lines of Sec. 14, G.C.&S.F. Sur. ..... Drlg. 645 ft.

RUNNELS COUNTY

Agnew et al's No. 1 H. B. Fowler, 150 ft. S and W of NE cor. of Sec. 33, N. Travis Sur. No. 533 ..... Drlg. 2,360 ft.
Golden Pet. Co.'s No. 3 McMillian, Subdv. 32, N. Travis Sur. ..... Underreaming at 2,227 ft.
B. C. Mann et al's No. 1 H. E. Wade, 150 ft. from S and 1,650 ft. from W line, Subdv. No. 5, Norvel Travis Sur. No. 533 ..... Drlg. 2,513 ft.
Mann et al's No. 1 Wade, 330 ft. from N and 330 ft. from E of NW cor. of E 75 acres of S 303.6 acres, Blk. 16, N. Travis Sur. ..... Underreaming; T.D. 2,470 ft.
F. D. Williams' No. 1 J. L. Elkins, 2,325 ft. from E and 1,300 ft. N of SW cor. of Blk. 12, but in Blk. 13, N. Travis Sur. No. 533 ..... Moving in material.

UPTON COUNTY

Gulf Prod. Co.'s No. 193 McElroy, 1,980 ft. from S and 660 ft. from W, Sec. 191, Blk. F, C.C.S.D.&R.G.N.G.... Drlg. 8,353 ft.

WARD COUNTY

Abell Brothers' No. 1 Archenhold et al, 2,310 ft. from NE line and 330 ft. from SE line of Sec. 34, H.&T.C. Sur., Blk. 5 ..... Drlg. 2,991 ft.
Atlantic Oil & Prod. Co.'s No. 1 Blank-Camp, 2,310 ft. from NW line and 2,310 ft. from SW line of Sec. 14, Blk. 34, H.&T.C. Sur. ..... S.D. 2,720 ft.
Atlantic Oil & Prod. Co.'s No. 9 Johnson, 330 ft. from NE line and 990 ft. from NW line of Sec. 9, Blk. 34, H.&T.C. Sur. ..... Drlg. 920 ft.
Atlantic Oil & Prod. Co.'s No. 10 Johnson, 990 ft. from NE line and 330 ft. from NW line of Sec. 9, Blk. 34, H.&T.C. Sur. ..... Location.
Atlantic Oil & Prod. Co.'s No. 12 Johnson, 990 ft. from SE line and 990 ft. from NE line of Sec. 9, Blk. 34, H.&T.C. Sur. ..... S.D. 1,480 ft.
Atlantic Oil & Prod. Co.'s No. 13 Johnson, 330 ft. from NE line and 330 ft. from SE line of Sec. 9, Blk. 34, H.&T.C. Sur. ..... Cellar.
Atlantic Oil & Prod. Co.'s No. 14 Johnson, 330 ft. from NE line and 2,310 ft. from NW line of Sec. 9, Blk. 34, H.&T.C. Sur. ..... Testing; T.D. 2,523 ft.
Atlantic Oil & Prod. Co.'s No. 15 Johnson, 330 ft. from SE line and 1,650 ft. from NE line of Sec. 9, Blk. 34, H.&T.C. Sur. ..... Location.
George Bentley et al's No. 1 A. Emory, 1,320 ft. from NE line and 2,310 ft. from NW line of Sec. 26, Blk. 5, H.&T.C. Sur. ..... T.D. 2,801 ft
L. G. Bradstreet et al's No. 1 Monroe et al, 2,310 ft. from NE and 330 ft. from SE line of Sec. 77, Blk. 34, H.&T.C. Sur. ..... Moving in material.
California Oil Co.'s No. 1 Durgin, 990 ft. from SE line and 330 ft. from SW line of Sec. 15, Blk. 34, H.&T.C. Sur. ..... Running csg.; T.D. 2,169 ft.
California Oil Co.'s No. 2 J. F. York, 2,982 ft. from SW and 1,650 ft. from NW cor. of Sec. 10, Blk. 34, H.&T.C. Sur. ..... Drlg. 583 ft.
Eastland Oil Co.'s No. 2 Johnson, 1,980 ft. from SE line and 1,980 ft. from SW line of Sec. 24, Blk. 34, H.&T.C. Sur. ..... Moving in rotary tools; T.D. 2,456 ft.
Gulf Prod. Co.'s No. 22 Hutchings, 990 ft. from N line and 330 ft. from W line of Sec. 4, Blk. F, G.&M.M. B.&A. Sur. ..... Drlg. 1,805 ft.
Gulf Prod. Co.'s No. 24 Hutchings, 1,549 ft. from N line and 440 ft. from W line of Sec. 7, Blk. O, G.&M.M. B.&A. Sur. ..... Drlg. 1,473 ft.
Gulf Prod. Co.'s No. 38 O'Brien, 990 ft. from S line and 990 ft. from E line of Sec. 16, Blk. F, G.&M.M. B.&A. Sur. ..... Drlg. 2,225 ft.
Gulf Prod. Co.'s No. 39 O'Brien, 990 ft. from N line and 990 ft. from E line of Sec. 17, Blk. F, G.&M.M. B.&A. Sur. ..... Drlg. 1,190 ft.
Gulf Prod. Co.'s No. 40 O'Brien, 1,650 ft. from N line and 330 ft. from E line of Sec. 17, Blk. F, G.&M.M. B.&A. Sur. ..... Rig up; waiting on crew.
Humble Oil & Ref. Co.'s No. 1 University, 990 ft. from N line and 440 ft. from E line of Sec. 2, Blk. 16, University Sur. ..... Drlg. 1,800 ft.
Simms Oil Co.'s No. 1 Massey, 2,310 ft. from SW line and 2,310 ft. from SE line of Sec. 14, Blk. 34, H.&T.C. Sur. ..... Rigging up rotary.
Sinclair Prairie Oil Co.'s No. 3 H. Archenhold, 330 ft. from NE lines and 330 ft. from SE lines of SW of Sec. 33, H.&T.C. Sur., Blk. 5 ..... Hole full of oil; T.D. 3,043 ft.
Sinclair Prairie Oil Co.'s No. 4 Archenhold, 2,310 ft. from NW line and 2,310 ft. from SW line of Sec. 33, Blk. 5, H.&T.C. Sur. ..... Drlg. 1,665 ft.
W. B. Smith's No. 1 Wallis, 2,636 ft. from NE line and 157 ft. from SE line of Sec. 19, Blk. 34, H.&T.C. Sur... Location.
S. A. Thompson's No. 1 Johnson, 1,650 ft. from SW line and 2,310 ft. from SE line of Sec. 9, Blk. 34, H.&T.C. Sur. ..... Drlg. 2,230 ft.

WINKLER COUNTY

Magnolia Pet. Co.'s No. 1 Scarborough, 1,650 ft. from N line and 330 ft. from W line of Sec. 1, Blk. 77, P.S.L. Sur. ..... Drlg. 960 ft.
Sinclair Prairie Oil Co.'s No. 3 W. F. Scarborough, 1,650 ft. from E line and 1,980 ft. from N line of Sec. 1, Blk. 17, P.S.L. Sur. ..... Drlg. 1,875 ft.

Wildcat Operations in Texas Panhandle

Week Ending December 18

CARSON COUNTY

Company, well, farm name, section and block— Remarks:
Reiger et al's No. 1 Foster, 330 ft. from N and E lines of SW Sec. 92, Blk. 7, I.&G.N.R.R. Sur. ..... Drlg. 2,600 ft.
Skelly Oil Co.'s No. 25 (West) Schaffer, 1,320 ft. from S line, 2,200 ft. from W line of Sec. 87, Blk. 4, I.&G.N. Sur. ..... Bldg. rig.

GRAY COUNTY

Anderson & Bean's No. 2 J. C. Vollmert, 330 ft. from S line, 330 ft. from E line, SW Sec. 140, I.&G.N. Sur., Blk. 3 ..... Cellar.
Chism et al's No. 1 J. M. Carpenter, 330 ft. from N line, 330 ft. from E line of SE Sec. 37, H.&G.N. Sur., Blk. 25 ..... S.D. 2,892 ft.
Dyke Oil Co.'s No. 1 Saunders, NW cor. S½ NW Sec. 3, Blk. 1, B.S.&F. Sur. ..... Rig up.
Gulf Prod. Co.'s No. 5 Ellis Cockrell, 330 ft. from N and E lines, S½ Sec. 2, Blk. M-21, T.C.R.R. Sur. ... Location.
Hendron et al's No. 1 Husselby, 330 ft. S and E, SW SW Sec. 11, Blk. A-9, H.&G.N. Sur. ..... Rig.
Masda-Shell's No. 4 Coombs-Worley, 990 ft. from N line, 330 ft. from E line, Sec. 25, Blk. 3, I.&G.N. Sur.. Rig.
Skelly Oil Co.'s No. 1-B L. H. Webb, 745 ft. from E line, 640 ft. from S line of NE Sec. 43, H.&G.N. Sur., Blk. 25 ..... Rig up.
Skelly Oil Co.'s No. 7 Vicars, 1,320 ft. from N line, 330 ft. from W line of E½ NW Sec. 127, Blk. 3, I.&G.N. Sur. ..... Rig up.
Skelly Oil Co.'s No. 4 Webb, 330 ft. from N line, 330 ft. from E line, Sec. 16, Blk. 25, H.&G.N. Sur. ..... Bldg. rig.
Sun Oil Co.'s No. 2-B Combs-Worley, 330 ft. from S line, 990 ft. from E line of SW of Sec. 34, I.&G. N. Sur., Blk. 3 ..... Shut in 2,936 ft.
Texas Co.'s No. 11 Cook-Faulkner, 1,310 ft. from W line, 1,148 ft. from N line of W 172 acres of Sec. 29, Blk. 2-B, H.&G.N. Sur. ..... Drlg. 1,690 ft.
F. H. Yealy's No. 2 Crank, 960 ft. from N and E lines of N 160 acres of W 400 acres of Sec. 163, Blk. 3, I.&G.N.R.R. Sur. ..... Drlg. 3,015 ft.

HUTCHINSON COUNTY

Stanolind O. & G. Co.'s No. 2-C Ware, 330 ft. from S line, 330 ft. from E line, Sec. 20, Blk. M-21, T.C. R.R. Sur. ..... Rig up.

WHEELER COUNTY

H. R. Anderson's No. 1 R. L. Harlan, 330 ft. from N line, 330 ft. from E line of NW Sec. 49, H.&G.N. Sur., Blk. 24 ..... Rig up.

Bureau of Mines Statistics for the Month of October, 1933

SUPPLY AND DEMAND OF ALL OILS

(Thousands of barrels of 42 gallons)

	October 1933	September 1933*	October 1932	Jan.-Oct., 1933	Jan.-Oct., 1932
NEW SUPPLY:					
Domestic production:					
Crude petroleum	76,017	78,186	65,598	757,059	663,234
Daily average	2,452	2,606	2,116	2,490	2,175
Natural gasoline	2,981	2,791	2,966	27,674	30,452
Benzol†	139	155	82	1,219	860
Total production	79,137	81,132	68,646	785,952	694,546
Daily average	2,553	2,704	2,214	2,585	2,277
Imports:					
Crude petroleum	‡1,936	‡2,146	2,455	27,418	29,973
Refined products	932	774	1,394	11,681	27,438
Total new supply, all oils	81,995	84,052	72,495	825,051	761,957
Daily average	2,645	2,802	2,339	2,714	2,498
Increase in stocks, all oils	§5,395	979	§6,056	30,100	§23,831
DEMAND:					
Total demand	87,390	83,073	78,551	804,951	785,788
Daily average	2,819	2,769	2,534	2,648	2,576
Exports:					
Crude petroleum	3,888	3,182	2,541	20,689	22,921
Refined products	6,552	5,007	5,495	57,589	65,595
Domestic demand:					
Motor fuel	32,973	34,393	32,680	319,094	316,895
Kerosene	3,406	3,375	3,115	30,571	26,451
Gas oil and fuel oil	28,550	24,997	24,588	261,071	251,149
Lubricants	1,507	1,426	1,142	13,861	14,547
Wax	124	112	59	1,031	757
Coke	1,098	854	1,020	8,113	7,711
Asphalt	1,227	1,161	1,450	9,866	11,194
Road oil	591	933	653	5,468	6,334
Still gas (production)	3,990	3,989	3,484	38,189	34,280
Miscellaneous	109	105	146	1,209	1,791
Losses and crude used as fuel	3,375	3,629	2,177	28,200	25,163
Total domestic demand	76,950	74,884	70,515	716,673	696,272
Daily average	2,482	2,496	2,275	2,357	2,283
STOCKS:					
Crude petroleum	356,885	359,979	351,893	356,885	351,893
Natural gasoline	3,287	3,545	3,462	3,287	3,462
Refined products	253,125	255,168	252,711	253,125	252,711
Total, all oils	613,297	618,692	608,067	613,297	608,067
Days' supply	218	223	240	232	236

*Revised. †Based upon production of coke reported to coal division by those by-product coke plants that recover benzol products. ‡Receipts of foreign crude as reported. §Decrease.

PRODUCTION OF CRUDE PETROLEUM BY DISTRICTS

(Thousands of barrels of 42 gallons)

	October, 1933 Total	October, 1933 Dly. av.	September, 1933 Total	September, 1933 Dly. av.	Jan.-Oct., 1933	Jan.-Oct., 1932
Appalachian:						
Pennsylvania grade	2,006	65	1,870	62	17,553	18,199
Other (inc. Kentucky)	569	18	550	18	5,220	6,910
Lima-N. E. Ind.-Mich.	1,035	33	989	33	6,852	6,709
Ill.-S. W. Ind.	480	15	482	16	4,041	4,763
Mid-Continent:						
N. La. and Ark.	1,806	58	1,840	61	17,772	18,627
W. Tex.-S. E. New Mex.	5,435	176	5,537	185	58,962	63,666
Other (Okla., Kans., N. Tex., etc.)	41,914	1,352	44,102	1,470	426,704	336,476
Gulf Coast	6,877	222	6,906	230	63,295	43,652
Rocky Mountain	1,230	40	1,237	41	12,235	14,841
California	14,665	473	14,674	489	144,425	149,391
Total	76,017	2,452	78,186	2,606	757,059	663,234

INDICATED DOMESTIC DEMAND FOR CRUDE PETROLEUM

(Thousands of barrels of 42 gallons)

	October, 1933 Total	October, 1933 Dly. av.	September, 1933* Total	September, 1933* Dly. av.	Jan.-Oct., 1933	Jan.-Oct., 1932
Domestic petroleum by fields of origin:						
Appalachian:						
Pennsylvania grade	1,920	62	2,137	71	18,722	17,746
Other (inc. Kentucky)	450	14	584	20	5,478	7,267
Lima-N. E. Ind.-Mich.	867	28	865	29	6,609	7,062
Ill.-S. W. Ind.	363	12	623	20	4,381	3,423
Mid-Continent:						
N. La. and Ark.	2,006	65	1,794	60	19,369	22,092
W. Tex.-S. E. N. Mex.	6,113	197	5,823	194	62,317	65,306
East Texas	16,909	545	16,620	554	397,976	352,757
Other (Okla., Kans., N. Tex., etc.)	25,917	836	26,673	889		
Gulf Coast	8,022	259	6,265	209	64,056	44,173
Rocky Mountain	1,415	46	1,326	44	12,634	12,733
California	13,859	447	14,484	483	139,638	147,411
Total demand	77,847	2,511	77,199	2,573	731,671	679,970
Exports	2,888	125	3,182	106	30,689	23,921
Domestic demand	73,959	2,386	74,017	2,467	700,982	656,049
Foreign petroleum	2,616	84	2,789	93	31,323	37,440
Total domestic demand	76,575	2,470	76,806	2,560	732,305	693,489

*Revised.

STOCKS OF CRUDE PETROLEUM BY STATES AND BY LOCATION

(Thousands of barrels of 42 gallons)

	October 31, 1933 Refinery	October 31, 1933 Pipe line	October 31, 1933 Lease	October 31, 1933 Total	September 30, 1933 Refinery	September 30, 1933 Pipe line	September 30, 1933 Lease	September 30, 1933 Total
Arkansas	773	4,780	391	5,944	755	4,926	401	6,082
California	8,567	27,001	1,676	37,244	8,094	26,982	1,936	37,012
Colorado	183	53	10	255	178	49	19	246
Georgia*	425	....	....	425	651	....	....	651
Illinois	993	10,267	112	11,472	1,004	10,155	107	11,266
Indiana	1,160	1,715	8	2,883	1,245	1,865	8	3,118
Kansas	1,759	12,564	404	14,727	1,842	12,808	354	15,002
Kentucky†	439	499	72	1,010	437	403	73	903
Louisiana‡	3,705	9,768	191	13,664	4,362	9,830	271	14,463
Maryland	1,035	....	....	1,035	1,164	....	....	1,164
Massachusetts§	1,165	....	....	1,165	1,319	....	....	1,319
Michigan	170	561	53	784	265	451	47	763
Missouri¶	172	3,388	....	3,560	181	3,270	....	3,451
Montana	263	276	70	608	285	327	67	679
New Jersey	4,663	306	....	4,969	5,161	182	....	5,343
New Mexico	9	249	175	433	12	238	179	430
New York	2,072	128	17	2,217	2,193	135	17	2,345
Ohio	1,106	7,378	116	8,600	1,042	7,110	111	8,263
Oklahoma	4,301	77,531	1,990	83,822	4,100	78,281	2,060	84,441
Pennsylvania	4,104	1,741	95	5,940	3,478	1,782	72	5,332
Texas	13,787	110,523	2,562	126,872	14,551	110,949	2,784	128,284
Utah	328	....	....	328	314	....	....	314
West Virginia	49	2,134	128	2,311	57	2,188	128	2,373
Wyoming‖	11,797	14,397	423	26,617	11,866	14,479	409	26,745
Total United States	63,025	285,358	8,502	356,885	64,546	286,408	9,025	359,979

*Includes South Carolina and Virginia. †Includes Tennessee. ‡Includes Alabama. §Includes Rhode Island. ¶Includes Iowa. ‖Includes Nebraska and South Dakota.

PRODUCTION OF CRUDE PETROLEUM BY STATES AND PRINCIPAL FIELDS

(Thousands of barrels of 42 gallons)

	October, 1933 Total	October, 1933 Dly. av.	September, 1933 Total	September, 1933 Dly. av.	Jan.-Oct., 1933	Jan.-Oct., 1932*
Arkansas	1,056	34	1,083	36	9,727	10,141
California:						
Kettleman Hills	1,871	60	1,899	63	18,503	18,270
Long Beach	1,839	59	2,009	67	21,159	22,148
Santa Fe Springs	1,423	46	1,490	50	15,820	19,103
Rest of State	9,551	308	9,276	309	88,943	88,870
Total California	14,665	473	14,674	489	144,425	149,391
Colorado	77	2	73	2	791	971
Illinois	406	13	412	14	3,461	4,085
Indiana:						
Southwestern	74	2	70	2	580	678
Northeastern	.....	.....	.....	.....	7	25
Total Indiana	74	2	70	2	587	703
Kansas	3,296	106	3,838	128	34,824	29,310
Kentucky	422	14	412	14	3,832	5,344
Louisiana:						
Gulf Coast	1,418	46	1,355	45	12,302	9,530
Rest of State	750	24	757	25	8,045	8,486
Total Louisiana	2,168	70	2,112	70	20,347	18,016
Michigan	939	30	893	30	5,977	5,770
Montana	195	6	178	6	1,715	2,118
New Mexico	1,294	42	1,252	42	11,529	10,659
New York	292	9	286	10	2,597	2,956
Ohio:						
Central and Eastern	299	10	275	9	2,716	3,017
Northwestern	96	3	95	3	868	914
Total Ohio	395	13	370	12	3,584	3,931
Oklahoma:						
Oklahoma City	6,211	201	6,899	230	56,577	29,051
Seminole	3,252	105	3,767	126	34,633	36,405
Rest of State	6,082	196	6,045	201	60,068	64,026
Total Oklahoma	15,545	502	16,711	557	151,278	129,482
Pennsylvania	1,188	38	1,108	37	10,472	10,464
Tennessee	1	.....	.....	.....	5	5
Texas:						
Gulf Coast	5,459	176	5,551	185	50,993	34,122
West Texas	4,172	135	4,318	144	47,749	53,333
East Texas	16,284	525	16,696	557	171,999	105,310
Rest of State	6,789	219	6,857	228	68,603	72,365
Total Texas	32,704	1,055	33,422	1,114	339,344	265,130
West Virginia	373	12	339	11	3,151	3,293
Wyoming:						
Salt Creek	573	19	580	19	5,918	6,766
Rest of State	354	11	373	13	3,495	4,654
Total Wyoming	927	30	953	32	9,413	11,420
Total United States	76,017	2,452	78,186	2,606	757,059	663,234

*Includes Alaska, Missouri and Utah.

COMPARATIVE ANALYSES

(Thousands of barrels of 42 gallons)

	October, 1933 Total	October, 1933 Dly. av.	September, 1933 Total	September, 1933 Dly. av.	Jan.-Oct., 1933	Jan.-Oct., 1932
CRUDE PETROLEUM:						
Runs to stills	75,461	2,434	75,316	2,511	722,353	688,495
MOTOR FUEL:						
Production	36,200	1,168	36,771	1,226	342,906	335,658
Imports	1	.....	1	.....	10	8,028
Bonded warehouses	.....	.....	.....	.....	2	9
For domestic use	1	.....	1	.....	8	8,019
Exports*	2,641	85	1,875	63	24,632	31,098
Stocks—gasoline	50,362	.....	49,517	.....	50,362	47,456
Stocks—natural gasoline	3,287	.....	3,545	.....	3,287	3,463
Domestic demand	32,973	1,064	34,393	1,143	319,094	316,895
KEROSENE:						
Production	3,993	129	4,004	133	40,627	35,938
Imports	.....	.....	.....	.....	.....	71
Exports	943	30	731	24	7,043	9,425
Stocks	7,987	.....	8,343	.....	7,987	5,465
Domestic demand	3,406	110	3,375	113	30,571	26,451
GAS OIL AND FUEL OIL:						
Production	28,160	908	26,274	876	263,636	246,356
Transfers†	184	6	244	8	5,751	4,942
Imports	902	29	750	25	11,469	19,124
Bonded warehouses	700	23	609	20	5,801	1,175
For domestic use	202	6	141	5	5,668	17,949
Exports	1,829	59	1,275	43	16,347	17,220
Stocks	133,276	.....	‡134,777	.....	133,276	137,446
Domestic demand	28,550	921	††24,997	833	261,071	251,149
Railroad (Class I)§	(¶)	(¶)	3,390	113	129,425	130,711
Public util. power plants**	942	30	††901	30	8,031	7,699
Other	(¶)	(¶)	††20,706	690	123,615	112,739
Bunker oil	2,353	76	2,530	84	27,493	31,972
LUBRICANTS:						
Production	2,115	68	2,046	68	19,213	19,164
Imports	.....	.....	.....	.....	.....	12
Exports	839	27	839	28	6,956	5,825
Stocks	6,776	.....	7,007	.....	6,776	8,289
Domestic demand	1,507	49	1,426	48	13,861	14,547
WAX (thousands of pounds):						
Production	47,320	1,526	42,280	1,409	384,160	390,600
Imports	3,100	100	5,476	183	26,355	26,883
Bonded warehouses	.....	.....	224	8	1,176	336
For domestic use	3,100	100	5,252	175	25,179	26,547
Exports	20,240	653	22,098	737	209,340	188,178
Stocks	75,803	.....	80,300	.....	75,803	188,637
Domestic demand	34,677	1,119	31,284	1,043	289,000	211,888
COKE (short tons):						
Production	139,400	4,497	138,800	4,627	1,329,800	1,492,500
Stocks	891,300	.....	987,000	.....	891,300	1,434,400
ASPHALT (short tons):						
Production	234,400	7,561	217,800	7,260	1,912,700	2,148,400
Imports (natural)	2,300	106	400	13	16,300	18,400
Stocks	242,200	.....	253,400	.....	242,200	248,300

*Includes benzol—73,536 bbls. in October, 1933. †Net transfers in California. ‡New basis. §Interstate Commerce Commission. ¶Not available. ‖January-September. **U. S. Geological Survey. ††Revised.

SHIPMENTS FROM CALIFORNIA TO EASTERN PORTS IN THE UNITED STATES*

(Thousands of barrels of 42 gallons)

	October, 1933	September, 1933	October, 1932	Jan.-Oct., 1933	Jan.-Oct., 1932
Gasoline	1,162	1,130	628	9,899	7,471
Natural gasoline	....	....	....	81	250
Kerosene	81	183	75	1,202	341
Gas oil and Diesel oil	92	161	165	1,855	3,111
Fuel oil	1,307	190	86	3,365	107
Lubricants	....	10	9	29	57
Asphalt	....	....	....	1	6
Miscellaneous	17	1	26	173	54
Total	2,659	1,674	979	15,415	9,446

*Compiled by E. T. Knudsen of the San Francisco office of the Bureau of Mines.

RECORD OF WELLS FOR IMPORTANT FLUSH FIELDS, OCTOBER, 1933*

	Completions			Total initial production	Average initial production	Drilling
	Oil	Gas	Dry	(bbls.)	(bbls.)	Oct. 31
Texas	610	8	106	886,900	1,130	923
East Texas	306	1	1	550,800	1,800	251
Gulf Coast	87	1	13	84,000	970	192
Conroe	36	1	1	56,200	1,560	32
West Texas	29	..	5	9,500	330	94
California	36	..	23	45,700	1,300	141
Kettleman Hills	2	..	..	10,700	5,359	19
Long Beach	6	..	..	900	150	11
Playa del Rey	..	..	1	.....	....	2
Oklahoma	52	5	12	23,500	450	296
Oklahoma County	4	1	..	3,800	950	28
Pottawatomie and Seminole counties	14	..	1	10,000	710	50
New Mexico	5	..	1	600	129	54
Lea County (Hobbs)	1	..	1	300	300	3
Other states	367	79	97	66,700	180	1,052
Total United States	1,070	92	239	823,400	770	2,466

*From the Oil and Gas Journal and California office of the American Petroleum Institute.

STOCKS OF CRUDE PETROLEUM BY GRADES

(Thousands of barrels of 42 gallons)

	Oct. 31, 1933	Sept. 30, 1933*	Aug. 31, 1933	Oct. 31, 1932
At refineries by location:				
East Coast: Domestic	9,718	9,530	9,190	9,049
Foreign	1,951	2,573	3,088	5,788
Appalachian	1,961	2,073	2,143	2,220
Indiana, Illinois, Kentucky, Michigan	3,751	3,830	3,857	3,456
Oklahoma, Kansas and Missouri	6,232	6,123	5,892	4,460
Texas: Inland	2,513	2,802	2,695	1,271
Gulf Coast: Domestic	11,267	11,746	11,459	6,163
Foreign	7	3	43	81
Louisiana Gulf Coast: Domestic	2,836	3,433	3,627	2,832
Foreign	538	610	698	1,158
Arkansas and Inland Louisiana	1,104	1,074	1,007	661
Rocky Mountain	12,580	12,655	12,730	1,783
California	8,567	8,094	8,289	10,091
Total	63,025	64,546	64,718	49,013
At refineries by origin:				
Pennsylvania grade	1,890	1,945	2,005	2,153
Other Appalachian (inc. Kentucky)	478	475	513	613
Lima-N. E. Indiana-Michigan	396	350	311	241
Illinois-S. W. Indiana	85	117	119	63
North Louisiana and Arkansas	2,055	2,588	2,290	1,922
West Texas and S. E. New Mexico	3,509	3,876	3,857	4,241
East Texas	7,837	8,590	9,446	15,889
Oklahoma, Kansas, North Texas, etc.	17,316	17,594	16,735	
Gulf Coast	5,238	5,117	4,616	5,939
Rocky Mountain	12,558	12,634	12,708	1,732
California	8,567	8,094	8,289	10,091
Foreign	2,496	3,186	3,829	7,027
Total	63,025	64,546	64,718	49,013
Pipe line and tank farm:				
Pennsylvania grade	3,882	3,769	3,977	4,924
Other Appalachian (inc. Kentucky)	779	662	671	867
Lima-N. E. Indiana-Michigan	1,130	1,034	933	1,224
Illinois-S. W. Indiana	10,890	10,746	10,891	11,188
North Louisiana and Arkansas	9,321	8,528	9,745	13,345
West Texas and S. E. New Mexico	29,143	29,409	29,731	32,947
East Texas	41,864	41,582	40,604	164,185
Oklahoma, Kansas, North Texas, etc.	135,212	135,195	135,237	
Gulf Coast	11,360	12,590	12,403	12,787
Rocky Mountain	14,776	14,911	14,942	25,478
California	27,001	26,982	26,908	29,905
Total	285,358	286,408	286,042	296,850
Lease (producers') stocks	9,502	9,025	9,241	†6,030
Total refinable crude in the United States	356,885	359,979	360,001	351,893

*Revised from those reported a month ago. †East of California only.

STOCKS HELD BY REFINING COMPANIES, OCTOBER 31, 1933

(Thousands of barrels of 42 gallons)

	Gasoline				Gas oil and distillate fuels	Residual fuel oils
	At refineries	Bulk and pipe lines	Total	Kerosene		
East Coast	4,491	9,674	14,165	2,144	5,251	4,457
Appalachian	1,356	934	2,340	298	482	396
Ind., Ill., Ky., etc.	3,892	3,595	7,488	567	2,895	2,688
Okla., Kans., Mo.	3,824	1,840	5,664	687	1,561	3,594
Texas Inland	1,665	374	2,039	196	501	2,693
Texas Gulf	4,313	630	4,943	1,928	3,245	3,820
Louisiana Gulf	911	341	1,252	430	2,036	1,226
Ark. and La. Inland	196	201	397	14	276	1,070
Rocky Mountain	934	.....	934	210	190	461
California	6,989	4,151	11,140	1,513	4,017	92,507
Total	28,572	21,790	50,362	7,987	20,454	*112,822

	Wax (thousands of lbs.)			Coke (tons)
	Lubricants	Crude scale	Refined	Total	
East Coast	2,086	7,745	11,585	19,330	49,090
Appalachian	798	10,267	1,755	12,022	5,000
Ind., Ill., Ky., etc.	824	9,782	982	10,765	85,500
Okla., Kans., Mo.	447	2,109	1,890	3,999	130,200
Texas Inland	80	.....	326	326	116,200
Texas Gulf	1,441	1,762	6,104	7,867	287,690
Louisiana Gulf	61	4,252	895	5,147	10,100
Ark. and La. Inland	27	.....	.....	.....	300
Rocky Mountain	159	15,241	1,106	16,347	106,000
California	853	.....	.....	.....	101,400
Total	6,776	51,160	24,643	75,803	891,300

	Asphalt (tons)	Road oil	Miscellaneous products	Unfinished oils	Natural gasoline
East Coast	75,500	116	68	7,677	73
Appalachian	3,290	17	32	1,568	1
Ind., Ill., Ky., etc.	59,000	65	11	7,194	27
Okla., Kans., Mo.	4,800	198	18	4,544	30
Texas Inland	.....	24	7	1,597	9
Texas Gulf	5,900	27	10	12,794	87
Louisiana Gulf	26,200	15	.....	1,781	.....
Ark. and La. Inland	18,100	2	2	513	2
Rocky Mountain	2,700	152	7	2,369	4
California	41,800	240	201	†7,416	2,474
Total	342,200	856	356	47,453	2,707

*During September 414,000 bbls. of heavy crude stocks were transferred to residual fuel-oil stocks in Oklahoma, and in October a similar transfer of 453,000 bbls. was made in Arkansas. It was decided to carry both revisions back to August 31 and the figures of residual fuel-oil stocks on the new basis are accordingly as follows:

	Aug. 31, 1933 (bbls.)	Sept. 30, 1933 (bbls.)
Oklahoma, Kansas and Missouri	3,344,000	3,871,000
Arkansas and Louisiana Inland	979,000	923,000
United States	114,333,700	114,617,000

†Includes 2,691,000 bbls. crude gasoline.

NUMBER OF WELLS COMPLETED IN THE UNITED STATES*

	October, 1933	September, 1933	October, 1932	Jan.-Oct., 1933	Jan.-Oct., 1932
Oil	1,070	955	827	6,178	8,796
Gas	92	96	97	732	850
Dry	239	264	351	2,683	2,946
Total	1,401	1,315	1,275	9,588	12,592

*From The Oil and Gas Journal and California office of the American Petroleum Institute.

RUNS TO STILLS AND OUTPUT OF REFINERIES, OCTOBER, 1933

(Thousands of barrels of 42 gallons)

INPUT—	Crude oil			Unfinished oils rerun	Natural gasoline	Total input
	Domestic	Foreign	Total			
East Coast	11,834	2,505	14,339	1,036	171	15,546
Appalachian	3,100	....	3,100	421	21	3,542
Ind., Ill., Ky., etc.	10,358	....	10,358	652	222	11,232
Okla., Kans., Mo.	8,513	....	8,513	487	531	9,531
Texas Inland	4,813	....	4,813	84	335	5,227
Texas Gulf	14,689	41	14,730	451	269	15,450
Louisiana Gulf	3,446	61	3,507	94	16	3,617
Ark. and La. Inland	1,619	....	1,619	406	37	2,062
Rocky Mountain	1,272	....	1,272	121	71	1,464
California	13,205	....	13,205	754	*952	14,911
Total	72,854	2,607	75,461	4,506	2,625	82,592

OUTPUT—	Gasoline	Kerosene	Gas oil and distillate fuels	Residual fuel oils	Lubricants	Wax (thousands lbs.)
East Coast	6,179	778	1,389	4,016	597	21,000
Appalachian	1,629	250	216	471	414	6,440
Ind., Ill., Ky., etc.	6,049	318	885	1,609	171	5,040
Okla., Kans., Mo.	5,123	592	667	1,724	223	2,520
Texas Inland	2,632	253	318	1,411	36	280
Texas Gulf	6,308	898	1,541	3,944	429	3,640
Louisiana Gulf	1,179	362	344	1,260	50	7,560
Ark. and La. Inland	736	60	134	520	25	.....
Rocky Mountain	764	62	67	259	17	840
California	5,322	420	1,596	5,605	153	.....
Total	†35,971	3,993	7,157	20,819	2,115	47,320

	Coke (tons)	Asphalt (tons)	Road oil	Still gas	Miscellaneous	Unfinished products	Shortage
East Coast	14,800	106,600	81	785	33	896	57
Appalachian	1,800	4,900	7	212	18	145	121
Ind., Ill., Ky., etc.	58,400	45,800	40	936	16	558	88
Okla., Kans., Mo.	26,400	6,400	108	426	8	180	304
Texas Inland	3,400	.....	19	113	5	148	284
Texas Gulf	23,000	12,200	15	875	2	929	314
Louisiana Gulf	800	6,500	5	89	....	160	101
Ark. and La. Inland	200	8,500	6	45	3	394	53
Rocky Mountain	8,200	600	28	82	....	93	45
California	2,400	42,900	142	427	18	926	54
Total	139,400	234,400	439	3,990	103	4,429	1,421

*Includes 112,000 bbls. run through pipe lines. †Includes 484,000 bbls. special naphthas.

CRACKING OPERATIONS

Fresh cracking stock charged to stills 36,929,000 bbls.; gasoline produced by cracking 16,001,000 bbls.; fuel oil produced by cracking 14,475,000 bbls.

GASOLINE PRODUCTION BY THE VARIOUS METHODS, OCTOBER, 1933

(Thousands of barrels of 42 gallons)

	Straightrun			Cracked			Nat. gasoline		Gasoline	
		Per cent			Per cent			Per cent		Per cent
	Total	(*)	(†)	Total	(*)	(†)	Total	(†)	Total	(*)
East Coast	2,935	20.8	48.3	3,023	21.1	48.9	171	2.8	6,179	41.9
Appalachian	791	25.5	48.6	817	26.4	50.1	21	1.3	1,629	51.9
Ind., Ill., etc.	2,468	23.8	40.8	3,359	32.5	55.5	222	3.7	6,049	56.3
Okla., Kans., Mo.	2,510	29.5	49.0	2,082	24.4	40.6	531	10.4	5,123	53.9
Texas Inland	1,551	32.2	58.9	746	15.5	28.4	335	12.7	2,632	47.7
Texas Gulf	2,915	19.8	46.2	3,124	21.2	49.5	269	4.3	6,308	41.0
Louisiana Gulf	607	17.3	51.5	556	15.9	47.2	16	1.3	1,179	33.2
Ark. and La. Inland	365	22.6	46.4	384	23.7	48.9	37	4.7	786	46.3
Rocky Mountain	336	26.4	44.0	357	28.1	46.7	71	9.3	764	54.5
California	1,817	21.3	52.9	1,553	11.8	29.2	952	17.9	5,322	33.1
Total	17,345	23.0	48.2	16,001	21.2	44.5	2,625	7.3	35,971	44.2

*Per cent of crude run. †Per cent of total gasoline output.

SHIPMENTS OF MOTOR FUEL BY PIPE LINES

(Thousands of barrels of 42 gallons)

	October, 1933	September, 1933	October, 1932	Jan.-Oct., 1933	Jan.-Oct., 1932
Motor fuel turned into lines	3,440	3,310	3,141	31,143	2 847
Motor fuel delivered from lines	3,356	3,321	3,089	31,087	2a,530
Shortage	11	17	12	69	73
Stocks in lines and working tanks end of month	1,185	1,112	1,206	1,185	1,206

RECEIPTS OF CRUDE PETROLEUM ON THE ATLANTIC SEABOARD

(Thousands of barrels of 42 gallons)

Domestic:	Oct., 1933	Foreign:	Oct., 1933
Pennsylvania grade	289	Venezuela	1,816
West Texas-S. E. New Mexico	1,836	Colombia	135
East Texas	4,486	Mexico	100
Other Mid-Continent	2,265	Other	80
Gulf Coast	3,179		
Total	12,055	Total	1,931
		Total receipts	13,986

Inquiries for Exports in the East Coast Markets

(Continued from Page 23)

ber to April). †For barging in minimum lots of 1,300 bbls. add 10 cents per barrel. ‡For barging in minimum lots of 650 bbls. add 10 cents per barrel. §In bond duty 17½ cents per barrel. This only applies on vessels loading for delivery at Canadian ports. ‖Subject to inquiry.

Fuel Oil Market

Price-cutting competition is reported in the bunker fuel market of the marine trade with the market for the low gravity industrial fuels also unsettled at several points. The recent advance to $1.20 for Bunker C is being maintained in the New York Harbor but in Philadelphia sales have been reported as low as $1.10. Major sellers are not disturbed because of this development and feel confident there will be no general reductions in prices. It is pointed out in regard to fuel oil prices that the coal industry last week filed a complaint with the NRA at Washington that fuel oil prices are too low and should be advanced to aid the coal business. It is not believed that the Government will take any action in this matter and so far as the oil companies are concerned there is no disposition to advance fuel oil prices to the point where some of the users would be completed to return to coal.

Other Products

There were no important price changes in other products. Neutral oils are maintaining their recent price advances in both the domestic and export markets. Cylinder stocks are not active but so far none of the major sellers has reduced its price below the going market. Wax continues firm with many sellers sold up through January. Kerosene and furnace oil distillates of all grades are moving more briskly to the consumer trade with no changes in tank car prices.

Kansas Commission Very Severe in Its Efforts to Keep Production Down to 112,000 Barrels

By JAMES McINTYRE

The Kansas Corporation Commission refused to change its order shutting in certain wells of the Lario Oil & Gas Co. in McPherson County and of the Gypsy Oil Co. in the Greenwich Pool in Sedgwick County because, the commission said, they had overproduced. Both companies had protested the order at a meeting of the commission. The Lario company's wells had water trouble and it was necessary to produce them to save them from possible damage or ruin. The Gypsy's alleged overproduction was done while the commission was considering the allowable to be established in the Greenwich Pool, which had not been included in the prorated fields until recently.

A general meeting of the commission with producers will be held in Wichita on December 20 when all previous orders will be up for suggestions and modifications. Neither the Lario nor Gypsy company has ever given the commission any trouble before, but the commission did not appear to consider this or the extenuating circumstances set forth by the two companies.

The commission issued a statement following the meeting explaining its side of the matter:

"To permit properties overproduced to continue production would either result in putting the state out of line with Federal requirements, with a resulting loss in our out of state market, or would necessitate making up the average out of the properties that were not overproduced.

"The only definite suggestion of an alternative method to shutting down properties until average is equalized, is to permit wells to mump and run into storage. It is our understanding that the Federal code prevents increase of storage. There are also other difficulties of administration and matters of equity of other producers that had to be considered.

"We believe that the method adopted in bringing a potential production of 289,000 bbls. a day down to the Federal allotment of 112,000 bbls. is the most equitable that has been devised. It provides a sliding scale of reduction, beginning with the smallest reduction on the pools with the lowest average production per well and going up to a maximum percentage on the pools with the largest wells.

"Some injustices will result from any possible order, but they must not be made to obscure the larger good secured for the whole industry. We will continue to do everything possible to correct any injustices that develop as result of the orders that are made."

Production by Pools

Estimated daily average production of the important pools in Kansas for the week ending December 16 is as follows:

Pool or field—	Dec. 16	Dec. 9
Hollow	8,210	7,760
Ritz-Canton	12,210	14,265
Voshell	9,125	7,375
Sedgwick County	3,770	7,035
Nikkell	3,260	1,865
Ellsworth County	4,395	4,252
Barton County	862	736
Rice County	8,206	8,056
Reno County	2,251	1,892
Ellis County	362	417
Kingman County	1,620	732
Stafford County	1,530	800
Russell County	6,065	5,775
Greenwood County	16,000	16,000
Butler County	17,700	17,600
Other pools	17,424	20,365
Total	106,990	109,025

Kingman County

Skelly Oil Co. has made a location for No. 2 North Ratcliff, CNL S half S half SW Section 19-27-10w, Cunningham Field, Kingman County, and had set 12-inch pipe at 257 feet in No. 4 F. C. Miles, 440 feet south and 1,320 feet west of NE cor. Section 30-27-10w. The company's No. 1 North Ratcliff and No. 1 D. Rouse were near completion.

Reno County

Olson Drilling Co. and Shell Petroleum Corp. have made a location for No. 2 Roberts, C SW NW Section 25-23-4w, Reno County. Sinclair Prairie Oil Co.'s No. 1 Stalcup, C SW NW Section 36-23-4w, was drilling at 452 feet when circulation was lost and the rig was skidded 50 feet south. Olson Drilling Co., Shell Petroleum Corp. and Continental Oil Co. have rig on the ground for No. 2 Vogt, C SW NE Section 26-23-4w.

Harvey County

In the Hollow Pool, Harvey County, Sinclair Prairie Oil Co.'s No. 4 Ediger, SE cor. SW Section 19-22-3w, was completed. It made 1,296 bbls. in 24 hours from Hunton and Wilcox sands in a potential test.

Phillips Petroleum Co.'s No. 2 Warkentine (twin), NW SW SW Section 20-22-3w, plugged back from 3,675 to 3,482 feet and acidized at 3,491-97 feet, swabbed 350 bbls. of oil in 11 hours. Ten wells in the Hollow Pool which have been reported as oil producers are not yet on the completed list. They are waiting for a potential test, or being worked on before being put on the completed list. The only new operation reported in the past week was Skelly Oil Co.'s No. 1 Martons, which will be deepened from 3,248 feet.

McPherson County

Slick, Pryor & Lockhart's No. 3 Stucky, CWL SW Section 27-20-3w, McPherson County, pumped 540 bbls. in 24 hours and was held for potential test. It is a Wilcox sand well at 3,392-3,419 feet. It produced more on the pump than in its previous swabbing tests.

Gypsy Oil Co.'s No. 3 Stucky, SW SE NE Section 33-20-3w, swabbed 42 bbls. in seven hours from Wilcox sand at 3,-355-90 feet. It will be shot.

Sinclair Prairie Oil Co. completed No. 6 McCurdy, SE NE SE Section 33-20-3w. It made 758 bbls. in a potential test, producing from Wilcox sand at 3,323-76 feet.

Mid-Kansas Oil & Gas Co.'s No. 1 Chindberg, NW NE SE Section 13-19-3w, was given a potential test and made 337 bbls. in 24 hours, 6 per cent water. Top of the chat 2,967 feet, total depth 3,027 feet. Roth & Faurot got 11,000,000 feet of gas from chat at 2,965-82 feet but continued drilling and the crew was straightreaming, total depth 2,996 feet.

Shell Petroleum Corp. shut in as a gas well No. 4 Meyers-B, C SW SE Section 14-19-2w, deepened from 2,928 to 2,937 feet. It showed 5,750,000 feet of gas per day with a spray of oil. Same company's No. 5 Meyers-B, SE cor. Section 14-19-2w, was given a potential test and made 889 bbls. It was completed. It is a Viola lime producer which had been acidized.

Apex Oil Co.'s No. 2 Knudson, SE SW SE Section 23-19-2w, got Viola lime at 3,375 feet and drilled to 3,380 feet. The lime was acidized and the well pumped 90 bbls. of oil and 5 bbls. of water in nine hours. It was reacidized and pumped 10 bbls. per hour.

Dickey Petroleum Co. and others' No. 3 Decker-B, NW cor. SE Section 35-19-2w, deepened from 2,948 feet, found Wilcox sand at 3,420 feet and was drilling at 3,425 feet with 1,000 feet of water in the hole.

Keys Petroleum Co.'s No. 1 Whittall, NW cor. NE Section 29-19-1w, flowed 260 bbls. in 25 hours from chat at 2,991-93 feet.

New work in McPherson County includes Spencer and Shell Petroleum Corp.'s No. 3 Neufeldt-A, NE SW SE Section 16-21-3w, spudding; Mabee, Inc. and Shell Petroleum Corp.'s No. 5 Friesen, NE SW SE Section 33-21-3w, spudding; Slick, Pryor & Lockhart's No. 1 Gratton, C NE NW NW Section 34-20-3w, deepening from 3,500 feet, drilled to 3,512 feet and shot with 20 quarts and was being cleaned out; Jones and others' No. 2 Flood, C E half SE NE Section 1-20-2w, cellar dug; Youker and others' No. 1 Gratton, SE SW SW Section 24-19-2w (deepening from 2,967 feet), drilling at 3,005 feet; Rice Oil Co. and Shell Petroleum Corp.'s No. 1 Wiles, NE NW NE Section 25-19-2w, drilling at 565 feet; Youker and others' No. 5 Eaton, NW SE NE Section 26-19-2w, rigging up to deepen from 695 feet.

Cowley and Chautauqua Counties

Roth & Faurot's No. 6 Brant, NW SW NE Section 12-34-4, Cowley County, was acidized at 2,555-75 feet and pumped 70 bbls. of oil in 24 hours.

Crow and others completed a couple of gas wells and were drilling a third well. No. 1 Cavitt, C NW SW Section 9-32-5, started at 90,000 feet at 715-45 feet and No. 1-A New Salem Park, C N half SW NW Section 9-32-5, was good for 108,000 feet at 732-50 feet. No. 1 Lowe, NE SE SE Section 5-32-5, was drilling at 200 feet.

York State Oil Co.'s No. 1 Layton, NW NE SE Section 16-34-9, Chautauqua County, was drilling at 1,190 feet. Christy and others were rigging up machine for No. 1 Caldwell, NE NE Section 2-32-10; Barker & Morgan were rigging up No. 2 Ferguson, SW NE NW Section 23-30-8, to drill deeper from 2,912 feet.

Sedgwick County

No completions were reported from Sedgwick County. Gypsy Oil Co. was moving in rotary for No. 10 Hamant, SW NE NW Section 14-26-2e.

Butler, Greenwood and Woodson

Wolf Creek Oil Co. and others completed No. 2 Kaub, CSL N half SE NE Section 15-25-13, Greenwood County. It pumped 75 bbls. in 24 hours from sand at 1,524-67 feet.

Ward McGinnis' No. 3 Beal, 780 feet south and 330 feet west of NE cor. Section 32-23-11, was abandoned. It had

(Continued on Page 55)

Wildcat Operations in Kansas

Week Ending December 16
(Descriptions are East unless marked otherwise)

Company, farm and location—	Remarks:
BARTON COUNTY	
Atlantic Oil Prod. Co.'s No. 1 Schneider, C NE SW Sec. 15-20-13w	T.D. 2,960 ft.; fishing.
Gypsy Oil Co.'s No. 1 Soderstrom, SE NE NW Sec. 21-17-13w	T.D. 2,156 ft.
Helmerich & Payne's No. 1 Everleigh, C SW SE Sec. 13-18-13w	T.D. 3,010 ft.; show of gas and oil.
Skelton et al's No. 1 Ott, C SE SE Sec. 16-19-14w	Acidized; 2,600 ft. of fluid in hole.
Sinclair Prairie Oil Co.'s No. 1 Redetzke, NE SE Sec. 9-16-11w	H.F.W. 3,378-84 ft.; abd.
BUTLER COUNTY	
Darby Pet. Co. and Lauck's No. 1 Lauck, SE SW SE Sec. 17-27-3	Drlg. 2,010 ft.; H.F.W.
COWLEY COUNTY	
Yarnell et al's No. 1-A Speer, SE NE NE Sec. 31-33-6e	U.R. 6-in. csg.; T.D. 2,210 ft.
Van Meter et al's No. 1 Moore, NE cor. Sec. 5-35-4	Rig.
EDWARDS COUNTY	
Atlantic Oil Prod. Co.'s No. 1 Bradbridge, C SE NW Sec. 1-24-16w	Drlg. 4,223 ft.
FINNEY COUNTY	
National Ref. Co. et al's No. 1 Smith, C SE SW Sec. 2-23-29w	T.D. 3,323 ft.; rebuilding rig.
HARVEY COUNTY	
Hartman et al's No. 1 Jones, C NW SW Sec. 19-25-1w	T.D. 2,940 ft.; running 6-in. csg.
KINGMAN COUNTY	
Olson and Skelly Oil Co.'s No. 1 Emery, C SW NW Sec. 22-25-6w	Abd. 4,077 ft.
McPHERSON COUNTY	
Dieter et al's No. 1 Carlson, SE cor. Sec. 4-19-3w	Drlg. 3,140 ft.
Jim Madison's No. 1 Boesker, SE NW Sec. 29-20-1w	Spudded.
Harris & Haun's No. 1 Rupp, SW cor. Sec. 12-21-2w	Drlg. 750 ft.
Paramount Oil Co.'s No. 1 Steinkirchner, NE SE SE Sec. 25-19-1w	Drlg. 3,509 ft.; H.F.W.
PHILLIPS COUNTY	
Ashby et al's No. 1 Donaldson, C NE NE Sec. 25-5-18w (O.W.D.D.)	C.O. 630 ft.
RENO COUNTY	
Roth & Faurot's No. 1 Yoder, C NW NW Sec. 15-24-5w	Set 6-in. pipe at 3,423 ft.; R.U.
RICE COUNTY	
Atlantic Oil Prod. Co.'s No. 1 Brandenstein, C SE SE Sec. 10-19-10w	Potential flow 1,033 bbls. 3,014-26 ft.; will deepen.
Danciger et al's No. 1 Roesler, SW NE Sec. 11-18-10w	T.D. 2,960 ft.; S.D.
El Dorado Ref. Co.'s No. 1 Wernet, SW NE Sec. 12-20-6w	Drlg. 2,800 ft.
Elmer Corn et al's No. 1 Hunter, NE cor. Sec. 35-19-7w	Rig on ground.
Lario O. & G. Co. and Elwell's No. 1 Russell, NE SW Sec. 29-23-7w	Drlg. 1,835 ft.
Verne Simmons et al's No. 1 Hunter, NE cor. Sec. 35-19-7w	Rigging up.
Langston et al's No. 1 Markle, NE SW Sec. 1-20-9w	T.D. 1,057 ft.
RUSSELL COUNTY	
Western Exploration Co.'s No. 1 Andrea, SW cor. Sec. 30-15-12w	Drlg. 1,957 ft.
Tom Palmer's No. 1 Steinle, NW SW Sec. 22-13-14w	Drlg. 290 ft.
SALINE COUNTY	
Lario O. & G. Co.'s No. 1 Burrell, NW SW Sec. 15-14-2w	Drlg. 3,037 ft.
SEDGWICK COUNTY	
Cameron et al's No. 1-A Funk, SW SE NW Sec. 6-26-2e.	Rig; spudded.
Wentz et al's No. 1 Stockamr, SW NE Sec. 31-26-2w	T.D. 2,875 ft.; running 8-in. csg.
STAFFORD COUNTY	
Atlantic Oil Prod. Co.'s No. 1 Willinger, C NE NE Sec. 18-22-11w	Drlg. 2,565 ft.
Vickers Pet. Co. and Phillips Pet. Co.'s No. 1 Cravens, SW NE Sec. 15-25-11w	Rigging up.
WOODSON COUNTY	
Lewis Bros.' No. 1 Riggs, SW cor. Sec. 19-26-14	Set pipe at 765 ft.; S.D.

Interesting Deep Tests in Oklahoma Will Resume Drilling; Deep Production Cut Is Expected

By JAMES McINTYRE

It is expected that during the last half of December, oil production of Oklahoma's prorated fields, and of Oklahoma generally will see a very great falling off to make up for the overproduction in the first half. Production last week mounted to 549,965 bbls. per day and in the previous week it averaged 501,525 bbls. per day. It has been the custom, especially in Oklahoma City, to take most of the monthly allowable in a short time and then to very severely restrict the output of the wells for the remainder of the month. The State's allowable is an average of 457,000 bbls. per day for December.

Important Wildcats Resumed

The Denver Producing & Refining Co. is preparing to deepen its already very deep test in Caddo County, No. 1 Noe, NW SW SW Section 34-10-10w, which has been shut down several months at a depth of 9,540 feet. The company has purchased more leases in the neighborhood of the test and plans to drill 1,000 feet deeper, if necessary, to make a thorough test.

Another interesting wildcat, which has resumed drilling after a long shutdown, is W. F. Brookshire's No. 1 Rowland, NW NE NE Section 16-3s-10e, in Atoka County, in the southeastern part of the State. It is now drilling at 3,445 feet. Brookshire expects to find Wilcox sand. Viola lime was topped at 2,708 feet and Simpson dense at 3,135 feet. It is the first deep test that has been drilled in that part of the State.

Paxton Gray of Sherman, Tex., is building a small refinery and has purchased a lease in Section 9-1s-14e in Atoka County. There are several shallow oil wells on the lease.

It was announced in Oklahoma City Saturday that the Tax Commission will not attempt to collect gross production tax on the 3 per cent deduction made by pipe lines and purchasing companies on tank measurements until after a test case now in the courts is decided. This case will be heard before Judge Edgar S. Vaught, who set the hearing for January 4. This is the case of the Stanolind Crude Oil Purchasing Co. against the Oklahoma Tax Commission in which the company seeks to restrain the commission from the collection of a 3 per cent tax on the value of 3 per cent of oil volume deducted by all purchasing companies from the gross production of the wells.

Previous to July 1, 1931, the producers and royalty owners themselves paid, or were supposed to pay, the 3 per cent gross production tax every three months, but a law was passed which put the burden of payment onto the purchasing companies, who were required to settle monthly. They in turn deducted the amount of the tax from the sum due the producers and royalty owners. The Tax Commission ruled that the tax be based on 100 per cent of the oil produced and not 97 per cent as has been the custom. As the tax collected is on the basis of the value of the oil produced and not on the volume, most if not all of the purchasers thereupon set up two price schedules for the oil, one on a 97 per cent basis and the other on what is practically a 100 per cent basis. For example, if a run of oil is purchased on a 97 per cent basis at $1 per barrel, the same oil would be paid for at the rate of 97 cents per barrel if purchased on a 100 per cent basis, so that in either case the producer and royalty owner receive the same amount and are satisfied. The Stanolind company's suit will be watched with great interest, as it was brought in the interests of all the purchasers and producers and royalty owners in the State.

New Indian Lease

The Commissioner of Indian Affairs, Department of the Interior, has issued a revised oil and gas mining lease effective on allotted Indian lands which is meant to stimulate drilling. The lease is drastic in terms and is viewed with alarm by operators who desire to purchase Indian allotted leases but who want more time before being required to start drilling. The new lease requires drilling to start within a year from date of purchase and the leaseowner must continue drilling until at least one well is drilled on each 40 acres contained in the lease. The royalty is not only one-eighth of the value of the oil but also one-eighth of the value of gas, gasoline and "other hydrocarbon substances" produced from the land. It has numerous other severe requirements.

Production by Pools

Estimated daily average production in Oklahoma in the week ending December 16 and in the preceding week follows:

	Dec. 16	Dec. 9
Allen	9,310	9,085
Bristow-Slick	11,000	11,100
Healdton	9,800	9,800
Hewitt	5,000	5,000
Burbank	9,500	9,500
Balance of Osage	18,750	19,000
Lucien	5,750	6,810
Bowlegs	11,580	8,740
Carr City	6,990	5,900
Cromwell	4,750	4,750
Earlsboro	10,565	7,625
East Earlsboro	14,615	12,840
South Earlsboro	1,700	1,270
Little River	18,135	12,005
East Little River	879	695
Oklahoma City	231,490	202,600
Seminole	10,685	9,505
East Seminole	1,270	1,300
Searight	2,485	2,135
Maud	1,315	1,360
Mission	5,010	3,930
Cushing-Shamrock	13,100	13,200
St. Louis-Pearson	24,975	22,715
Tatums-Tussey	8,250	9,009
Sholem-Alechem	4,850	4,850
Duncan district	4,400	4,400
Tonkawa-Garber-Thomas	6,600	6,600
Holdenville-Fish	6,570	6,345
Wewoka	4,150	4,200
Other pools	86,200	85,262
Total Oklahoma	549,965	501,525

Osage County

In Osage County, Phillips Petroleum Co.'s No. 1, C SW SW NW Section 11-24-6, was dry and abandoned. It was drilled to Siliceous lime at 3,279-3,333 feet.

Sinclair Prairie Oil Co. completed No. 2, NE NW NW Section 22-25-6, a 100-bbl. well at 2,716-63 feet.

In the Naval Reserve, or St. John area, Lewis Production Co.'s No. 1, SW cor. Section 10-24-7, was shot with 90 quarts at 2,514-2,552 feet, Bartlesville sand, and it flowed 210 bbls. the first 16 hours.

Producers & Refiners Corp.'s No. 3, NW cor. Section 15-24-7, got Bartlesville sand at 2,482-2,561 feet and swabbed 27 bbls. in six hours. It will be shot.

Champlin Refining Co.'s No. 2, NW NE SE Section 16-24-7, flowed 150 bbls. in 24 hours and later 135 bbls. in 24 hours. It had been drilled deeper from 2,654 feet to 2,709 feet.

Kasishke and Lewis Production Co.'s No. 3, SW SE NE Section 16-24-7, flowed 200 bbls. from Bartlesville sand at 2,600-60 feet, but may be deepened.

Champlin Refining Co. made location for No. 4, SW cor. SE Section 16-24-7; had cellar dug for No. 5, NW cor. SE, and had location made for No. 6, NE NW SE, of Section 16. Kasishke and Lewis Production Co. were spudding No. 6, SW cor. NE Section 16-24-7. There are 16 wells drilling, rigs up and locations made in the St. John area, in Sections 10, 11, 15, 16, 21, 24, 25 and 32, in Township 24-7.

F. M. Penny's No. 4, SW cor. SE Section 15-24-8, was shot in Burgess sand at 2,321-63 feet and is estimated at 50 bbls.

Gray & Tolson's No. 3, CEL SW SE SW Section 27-21-9, shot with 40 quarts at 1,124-32 feet, started at 20 bbls. It was completed.

Sinclair Prairie Oil Co. was building rig for No. 1, SW cor. NW Section 11-24-7; Champlin Refining Co. was rigging up rotary for No. 3, CNL SE NE SE Section 16-24-7.

Lewis Production Co. made location for No. 2, NE cor. NW Section 21-24-7. Kasishke & Higgins made location for No. 2, NE SE NE NW Section 24-24-7.

Oklahoma County

Champlin Pipe Line Co. is connected with the H. E. Rapp well in Section 19-14-3w, Edmond district, Oklahoma County, which is good for 175 bbls. per day, but which will be restricted as to production.

In the Oklahoma City Field, Denver Producing & Refining Co.'s No. 2 Frisco Freight House, 863 feet south and 964 feet west of the NW cor. Section 3-11-3w, was put on the gas lift for a 12-hour test and made 2,811 bbls. It was then shut in.

Phillips Petroleum Co.'s No. 3 Hardcastle, 1,213 feet from south line and 746 feet from east line of the SW Section 22-11-3w, flowed 941 bbls. in four hours on the gas lift. It was completed.

Skelly Oil Co. has rig up for No. 1 Empire, 445 feet south and 1,201 feet east of the NW cor. Section 3-11-3w. Indian Territory Illuminating Oil Co. has made location for No. 7 Little, C SW NE NE Section 27-11-3w.

The Springrose Drilling Co.'s test, No. 1 Edwards, C SE SE Section 19-11-1e, was drilled by bit at 5,770 feet. The hole had reached a total depth of 5,971 feet when the drill pipe stuck.

Greater Seminole Field

Carter Oil Co. and others' No. 2 Canard, C S half SE SW Section 35-11-6, Keokuk Falls area, Seminole County, was given a potential test and flowed 1,695 bbls. in 24 hours. It is a Misener sand producer at 4,110-23 feet.

Atlantic Oil Producing Co. and others' No. 1 School land, C NE NW NW Section 36-10-4, Pottawatomie County, stood with 2,000 feet of water in the hole at a total depth of 4,514 feet. Wilcox sand was topped at 4,497 feet. It was shut down.

E. Haer has abandoned the location for No. 2 fee, SE NE SW Section 31-10-5, Pottawatomie County.

Texas Co. has a 22,000,000-foot gasser in No. 2 Gregory, C NE NW NE Section 36-10-11, Okfuskee County, from Deaner sand at 2,628-43 feet and was rigging up No. 3, NE cor. Section 36.

Sinclair Prairie Oil Co.'s No. 2 Meyers, SE cor. Section 32-7-4, after an acid treatment, swabbed 1,097 bbls. in 24 hours. It produces from dolomite at 4,-140-81 feet.

Amerada Petroleum Corp.'s No. 4 Harrison, SW NW SW Section 33-7-4, had dolomite at 4,070 feet and drilled to 4,119 feet. The well swabbed 82 bbls. in 12 hours. It will be acidized.

Atlantic Oil Producing Co. and Sinclair Prairie Oil Co. will drill a Hunton lime test, No. 2 Foreman, C SE SW Section 18-9-5. Texas Co. has started drilling No. 1 Terfertiller, NW cor. NE Section 4-8-3, a wildcat in Pottawatomie County. Ray Stepp has machine in for No. 1-B Butler, NW cor. SW SE NW Section 30-8-8, Seminole County. Dingee and others were drilling at 1,400 feet in No. 1 Thomas, SE NE NE Section 9-7-4. Conley Drilling Co. has resumed work on No. 1 Vinson, NE cor. Section 13-7-4, and was drilling at 3,150 feet. Jones and others have cellar dug for No. 1 Banta, SE NW SE Section 32-7-4. Manahan's No. 4 Chapman, NE SE SW Section 10-7-8, was drilling at 540 feet. Limestone Oil & Gas Co. has rig up for No. 9 Walker, NW SE NE Section 15-7-8. Bonded Refining Co. was spudding No. 1 Warren, NW SE NE Section 22-7-8.

Pontotoc County

Vierson and others abandoned their No. 1 Norman, NE NW SE Section 7-5-5, Pontotoc County, at 2,795 feet. It was dry.

W. A. Delaney shut in his 17,000,-000-foot gasser, No. 1 Craddock, SE NE NE Section 25-2n-6e. It is producing from sand at 1,388-1,414 feet.

Moore and others have rig up for No. 2 Gray, SW SE NE Section 25-5-4. Patsy Oil Co. was drilling at 1,125 feet in No. 3 Burke, SW NE SE Section 25-5-4. H. & M. Drilling Co.'s No. 1-A Busby, NW SE SE Section 20-5-8, was drilling at 480 feet. Gilbreath's No. 1-A Butler, SW cor. Section 21-5-8, was spudding.

In the Lucien Field

Lucien Consolidated's No. 1 Magney, C SW SW Section 17-20-2w, in the Lucien Field, in Noble County, was opened up for one and one-half hours and flowed 420 bbls. It was shut in for potential test. Same company's No. 2 Magney, C SE SW Section 17-20-2w, set 8-inch pipe at 5,040 feet, total depth 5,064 feet, in dolomite and lime.

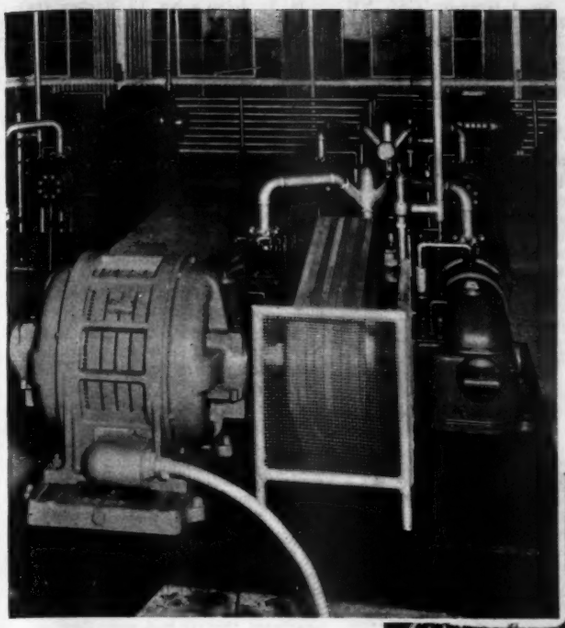
Lucien Consolidated's No. 1 Moelling, C SW SE Section 17-20-3w, was producing from 750 to 950 bbls. per day while drilling in Wilcox sand. The first oil showing was at 5,146 feet, total depth 5,160 feet.

Lucien Consolidated's No. 2 Wolfe, C NW NW Section 17-20-2w, which had been acidized with small results, was shot with 100 quarts of nitroglycerin at 5,175-5,200 feet. It swabbed only 50 bbls.

Carter Oil Co. set 12-inch pipe at 121 feet in No. 1 Weber, C NE SW Section 20-20-2w. Magnolia Petroleum Co. was still waiting for drilling water at its location No. 1 O. T. Long, C SW SE Section 20-20-2w. Minnehoma Oil Co.'s No. 2 Shonwald, 440 feet from south line and 990 feet from east line, NE Section 20-20-2w, was digging cellar. Stanolind Oil & Gas Co. and Amerada Petroleum Corp.'s No. 1 D. Shonwald, C SE SE Section 20-20-2w, was drilling at 4,294 feet in lime and shale. Shell Petroleum Corp.'s No. 1 Hay, C SW SW Section 21-20-2w, set 8⅝-inch casing at 5,007 feet. Stanolind and Amerada's No. 1 Frederick, C SW SE Section 28-20-2w, is still a location.

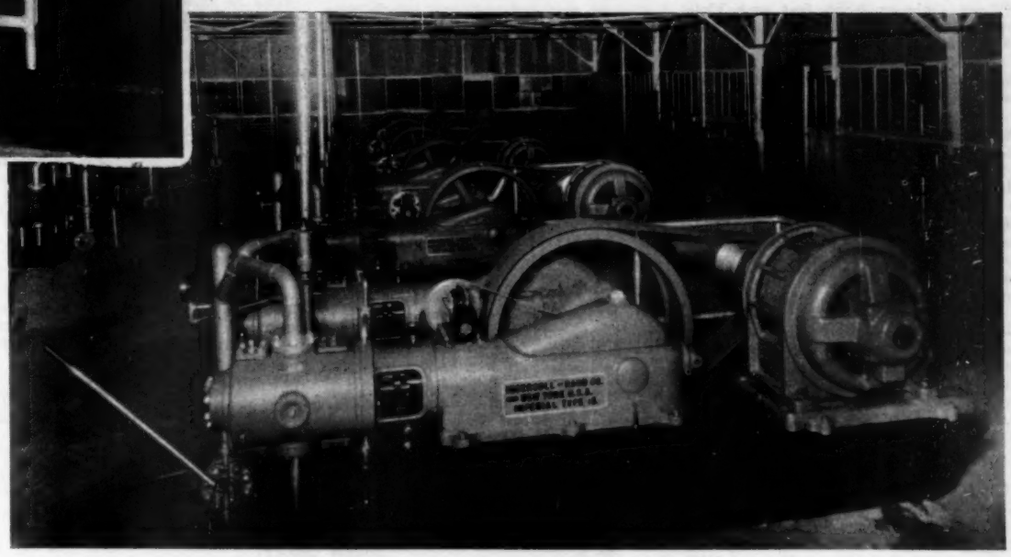
Logan County Operations

L. H. Wents' No. 2 Williams, NW NE Section 31-19-4w, Marshall Field, Logan County, being deepened from 6,-180 feet, was drilling at 6,410 feet. It



ELECTRIC POWER

offers every advantage



This plant, which is designed to flow as many as 30 wells, contains twelve 100 HP compressors. Its cost was only about 1/8 of that of old type, non-electric, gas lift equipment. It is compact and economical to operate.

Our engineers will gladly supply you with comparative economic studies, or information on various lifting methods where the cost of power and fuel are factors.

● Lower Operating Costs

Use of purchased electric power reduces your operating costs to a minimum. Our rates are now based on reasonable flat-rate terms for only the actual amount of energy used. There is no "demand" charge. There is no waste.

● Maintenance Costs Less

Purchased electric power cuts down maintenance costs because it practically eliminates costly breakdowns. Fire and explosion hazards are reduced to a minimum. Use it and enjoy economical, uninterrupted operation over a longer period of time.

● Equipment Costs Less

With electric power you have a lower investment in equipment. Let the power company supply the prime mover for the compressor. You can pay as you go, without an excessive investment. The power company has the investment, even though the life of the field is an unknown factor.

● Always Dependable

Day in and day out, electric power gives a more uniform, more dependable performance. Whether it's for drilling, for pumping, or for pipe lines, there is always ample capacity to care for every need. Just a simple turn of a switch and you have an unlimited supply of power at your command.

OKLAHOMA GAS AND ELECTRIC COMPANY

Commercial Department

OKLAHOMA CITY, OKLAHOMA

had the top of the Arbuckle lime at 6,395 feet.

In the Crescent Pool, Logan County, Sinclair Prairie Oil Co.'s No. 1 Short, C SW SW NE Section 27-17-4w, cored sand at 6,413-16 feet. The top of the core was stained but the remainder of what was recovered was dry. The hole was at a total depth of 6,426 feet. The same company's No. 1 Shaffer, C NE NE NW Section 28-17-4w, got the top of the second Wilcox sand at 6,625 feet and cored at 6,634-37½ feet, but the core showed only salt water. The hole will be plugged back to the base of the first Wilcox sand at 6,485 feet. It showed about 28,000,000 feet of gas in the upper sand.

Mid-Continent Petroleum Corp.'s No. 1 Campbell, C SE NE Section 33-17-4w, had run casing to 6,000 feet. It had Sylvan shale at 5,885 feet and Viola lime at 5,900 feet.

Texas Co.'s No. 1 Denney, C NE SE Section 33-17-4w, set 7-inch pipe at 5,978 feet, total depth 5,992 feet. It had Sylvan shale at 5,885 feet and Viola at 5,910 feet and Simpson dense at 5,968 feet.

Eason Oil Co. has made a location for No. 2 Katscher, C NW SW Section 34-17-4w.

Gypsy Oil Co. and Carter Oil Co.'s No. 1 Knowles, C NW NW Section 34-17-4w, was drilling at 4,417 feet.

Amerada Petroleum Corp. and Stanolind Oil & Gas Co. have cellar dug for a wildcat test on a seismograph high, No. 1 Foster, NW NE Section 14-17-1w, Logan County, near the hamlet of Langston. This is on a unit block owned by the Stanolind-Amerada, Sinclair Prairie and Slick estate.

The high is reported to extend under the Langston townsite and the state college for negroes. At a recent school land lease sale, the Texas Co. bought one 160-acre tract for $16,500 and several other tracts drew bonuses of over $10,000 each.

Creek County

Johnson Oil Refining Co.'s No. 2 Holmes, SW SE SE Section 7-19-10, Creek County, found Bartlesville sand at 2,143-76 feet, but it contained salt water. The hole was abandoned.

Comail Oil Co.'s No. 4 Brewer, NW SW NE Section 8-18-7, Cushing-Shamrock Field, was shot with 100 quarts in lime at 2,456-2,513 feet and made 100 bbls. of oil and 50 bbls. of water. It was completed.

Johnson Oil Refining Co.'s No. 3 Prince, NE NW NE Section 3-18-8, was completed. It swabbed 50 bbls. after a shot in Red Fork sand at 2,602-25 feet.

E. L. Robinson's No. 2 Prince, NE SW NE Section 3-18-8, was completed. It is a 35-bbl. well in Red Fork sand at 2,541-76 feet.

Jones & Doss' No. 4 Tiger, CSL NW NE Section 34-18-8, was completed. It is a Layton sand well at 1,267-98 feet, good for 150 bbls. initially. No. 5 Tiger was also finished up. It swabbed and flowed 311 bbls. in 24 hours from sand at 1,304-32 feet.

Wasson & McNamara's No. 1 Posey, SE SW SW Section 22-18-9, got a hole full of water in Bartlesville sand at 2,420-95 feet.

Williams & Hammon's No. 1 Taylor, SE NW NW Section 2-17-8, is a 90-bbl. completion in Burgess sand at 3,091-99 feet.

W. E. Page's No. 1-A Jack, SW SE NE Section 22-17-11, was dry and abandoned after finding water in the Wilcox sand at 2,516-28 feet.

Crosbie & Gillespie's No. 2 Thompson, SE NW NE Section 36-17-11, had a hole full of water from Wilcox sand at 2,615-25 feet and it was abandoned.

New work started in Creek County included Pure Oil Co. and Johnson's No. 3 Brightsman, SW SE NE Section 30-19-10, rig up; Gibson and others' No. 3 Jackson, SW NE NW Section 3-18-8, rig; F. O. Akin's No. 11 Wilson, SE NW SE Section 34-18-8, machine; Doke & Hughes' No. 2 Rentie, NE SW SE Section 34-18-8, machine; Jones & Doss' No. 7 Tiger, CNL NW NE Section 34-18-8, rigging up; Marrs and others' No. 5 Tiger, NW NE NE Section 34-18-8, rigging up; Todd & Willoughby's No. 1, CEL SE NW Section 34-18-8, machine; Kilgore and others' No. 3 Tiger, NW NE SW NE Section 34-18-8, drilling at 300 feet; same operators' No. 5 Tiger, SW NW SW NE Section 34-18-8, drilling at 300 feet; Doke & Hughes' No. 1 Watson, NE cor. NW Section 10-17-8, rig on the ground; Smith and others' No. 5 Fry (twin), SW NW SE Section 14-17-8, drilling at 350 feet; Sherry & Murta's No. 1-A Harwell, NE SE NW Section 36-17-11, rig on the ground; Sheridan Oil Co.'s No. 5 Peters, SW SE SE Section 33-16-11, rigging up.

Tulsa and Wagoner Counties

Anbern and others' No. 1 Shoals, SW SE NE Section 32-19-11, Sand Springs district, Tulsa County, was dry in the Mississippi lime at 2,043-48 feet and was abandoned.

McGonical's No. 1 Grayson, CSL NE SE Section 12-19-13, was drilling at 1,000 feet. W. C. Hatch's No. 1 Carr, SW NW NE Section 23-18-14, spudding. Eppler and others' No. 2 Tamle, SE NE NE Section 6-17-14, rigging up. Rachael Oil Co.'s No. 2 Hodge, NE cor. NW Section 8-17-14, rigging up.

Okmulgee and Muskogee Counties

Sheridan Oil Co.'s No. 4 Peters, CSL SE SE Section 33-16-11, drilled to Taneha sand at 2,322-28 feet and found it dry. The hole was abandoned, and the company is rigging up No. 5 Peters, SW SE SE Section 33.

Knowlton and others have a failure in No. 3 Tiger, NE cor. SE Section 24-16-13, at 1,630-54 feet, Glen sand.

Bryan and others have made location for No. 1 Barnett, SW cor. Section 27-16-13.

R. E. Godfrey was drilling at 214 feet in No. 1 Herrod, SE cor. Section 14-15-17.

Wildcat Operations in Oklahoma

Week Ending December 16

Northern Oklahoma

ALFALFA COUNTY

Company, farm and location— Remarks:

Acre et al's No. 1 Acre, C SW NE Sec. 14-24-11w..... T.D. 6,255 ft.; swbd. 70 bbls. in 24 hrs.

BECKHAM COUNTY

West Oak Gas Co. et al's No. 1 Powell, NW SW Sec. 11-9-25w ..... Drlg. 1,803 ft.

CADDO COUNTY

Denver Prod. & Ref. Co.'s No. 1 Noe, NW SW SW Sec. 34-10-10w ..... T.D. 9,540 ft.; preparing to D.D.

CARTER COUNTY

Kilgore et al's No. 1 Williams, SE NW SW Sec. 20-1s-2w. Slush pits dug.

COMANCHE COUNTY

Stores et al's No. 1 Crutcher, C NE Sec. 11-1n-12w.... Set 10-in. pipe 18 ft.

GARFIELD COUNTY

J. H. Lewis' No. Clark, C NW NW Sec. 34-21-6w..... T.D. 6,397 ft.

GARVIN COUNTY

National Prod. Co.'s No. 1 Littrell, NE cor. Sec. 31-2n-3w. Drlg. 150 ft.

DEWEY COUNTY

Continental Oil Co.'s No. 1 Bessemer, C SW NE Sec. 3-19-20w (4,000-ft. test) ..... Drlg. 412 ft.

HUGHES COUNTY

Birk-Kan.'s No. 1 Gardner, NE NW Sec. 22-6-9 ..... Moving in rig.

Scruggs et al's No. 1 Black, NE Sec. 13-9-10..... T.D. 2,660 ft.; fishing.

KAY COUNTY

Morgan et al's No. 1 Bush, NW NE NE Sec. 25-28-4.. T.D. 3,291 ft.; fishing for tools.

Burton Lewright et al's No. 1 Leseman, SW NE SE Sec. 4-28-2 ..... Rig.

KIOWA COUNTY

Christian's No. 1 James, NE NW Sec. 8-7-18w..... T.D. 1,904 ft.; repairing rig.

Erickson et al's No. 1 Heatherton, NW SW Sec. 14-6-16w. Drlg. 190 ft.

LINCOLN COUNTY

Amerada Pet. and Stanolind O. & G. Co.'s No. 1 Martinek, NW SE Sec. 35-13-5e ..... D.P. stuck; T.D. 3,798 ft.

Huckleberry et al's No. 1 Boland, SW cor. Sec. 25-12-2e.. Drlg. 3,470 ft.

LOGAN COUNTY

Amerada and Stanolind's No. 1 Fouts, NW NE Sec. 14-17-1w ..... Cellar.

Barnsdall Oil Co. et al's No. 1 Seyler, NE SE Sec. 12-15-4w ..... Drlg. 510 ft.

Jadeka Dev. Co.'s No. 1 Frakes, C SW NE SW Sec. 16-15-6w ..... Drlg. 1,620 ft.

MURRAY COUNTY

A. E. Harden's No. 1 Sadler, NE Sec. 19-1-2 ..... Rig.

T. E. Revells et al's No. 1 Wolfe, NE cor. Sec. 18-1-2.... Running 8-in. pipe; T.D. 1,500 ft.

MUSKOGEE COUNTY

J. S. Routt et al's No. 1 Escoe, CWL SE NE Sec. 17-13-17. T.D. 1,200 ft.; S.D. for 10-in. csg.

OKLAHOMA COUNTY

Springrose Drlg. Co.'s No. 1 Edwards, C SE SE Sec. 19-11-1 ..... T.D. 5,971 ft.; drill pipe stuck.

PAYNE COUNTY

L. G. Hulse's No. 1 Sloan, SW NW SE Sec. 19-17-3..... Drlg. 200 ft.

Mid-Continent Pet. Corp.'s No. 1 Swank, SE NE NE Sec. 19-19-2 ..... Drlg. 4,268 ft.

PITTSBURG COUNTY

Moffett & Hall's No. 1 Jones, C NE NW Sec. 14-8-14.... Lost tools; T.D. 3,200 ft.; S.D.

PONTOTOC COUNTY

Galbreath's No. 1 Stafford, NE SE SE Sec. 31-2-6..... Drlg. 1,610 ft.

W. E. McGraw's No. 1 Mayhue, NE Sec. 19-2-6.... Drlg. 1,683 ft.

Stanolind-Amerada's No. 1 Aldridge, C N½ S½ SE Sec. 2-5-7 ..... Drlg. 3,059 ft.

Williams' No. 1 Kroth, NE SE Sec. 33-3-4..... H.F.W. 1,977 ft.

Wirrick's No. 1 fee, SE SW Sec. 29-2-7..... Acidized; flowed 550 bbls. in 24 hrs.; S.D. for tankage.

POTTAWATOMIE COUNTY

Atlantic Oil Prod. Co.'s No. 1 School land, C NE NW NW Sec. 36-10-4 ..... T.D. 4,514 ft.; 2,000 ft. wtr. in hole.

Payne Drlg. Co.'s No. 1 Lovelace, NW SW NW Sec. 27-6-4. T.D. 3,780 ft.; csg. collapsed.

Texas Co.'s No. 1 Terfertiller, NW NE Sec. 4-8-3 ..... Spudding.

SEMINOLE COUNTY

John Burns' No. 1-B Shepard, SE NE Sec. 4-8-8 (O. W.D.D.) ..... Drlg. 1,650 ft.

Amerada Pet. Corp.'s No. 1 Parsons, 330 ft. N of S line of Lot 7, Sec. 12-11-6 ..... Drlg. 840 ft.

Flemlee et al's No. 1 Bowlegs, SE NE SW Sec. 1-7-7.. Drlg. 1,260 ft.

WASHITA COUNTY

McWhirter & Bost's No. 1 Hall, SW SE SE Sec. 28-8-19w. T.D. 2,155 ft.; lost sand pump.

Southern Oklahoma

ATOKA COUNTY

J. D. Boukan's No. 1 Howard, NW SW NW Sec. 20-2s-10e. Drlg. 1,015 ft.

Brookshire et al's No. 1 Rowland, NW NE NE Sec. 18-3s-10e ..... Drlg. 3,427 ft.

JACKSON COUNTY

Gypsy Oil Co.'s No. 1 Kelly, NE Sec. 19-1n-20w..... Drlg. 1,735 ft.

MURRAY COUNTY

F. E. Revells' No. 1 Wolfe, NE cor. Sec. 18-1n-2e..... Drlg. 1,800 ft.

PUSHMATAHA COUNTY

J. V. Scrivener et al's No. 1 Swink, C NE SE Sec. 29-6s-20e ..... S.D. 410 ft.

Whitehead et al's No. 1 Messer, SE SW SW Sec. 25-3s-15e. T.D. 2,405 ft.; S.D.

STEPHENS COUNTY

J. W. Madison's No. 1 Tussey, SW SE NW Sec. 24-1n-4w. Drlg. 2,975 ft.

Lloyd Oil Co.'s No. 1 McKimmons, SW cor. Sec. 15-1n-4w ..... Drlg. 3,085 ft.

R. G. Poland et al's No. 1 Green, C NE NW NW Sec. 3-1s-4w ..... Drlg. 3,158 ft.

TILLMAN COUNTY

J. H. Everett's No. 1 Crane, SW cor. Sec. 15-1s-14w.... Rig.

H. L. Jolley's No. 12 Mackey (twin), C NW SW Section 9-15-18, was dry and abandoned at 910 feet. Muskogee sand was drilled at 878-910 feet.

Considerable new work was started in the Bald Hill district, Okmulgee County. H. G. Hazlett's No. 1 Dunbar, C NW SW Section 30-14-13, was rigging up. J. E. Wallace was drilling at 700 feet in No. 9 Bassett, NE SE NE Section 15-14-14. M. Castleman was drilling at 500 feet in No. 10 Thomas, SE NW SW SE Section 23-14-14, and the Francis Oil Co.'s No. 1-A Ashley, NE cor. SW Section 29-14-14, was drilling at 375 feet. M. Castleman's No. 1 Rentie, SW NW SE Section 11-14-14, was dry and abandoned at 1,080 feet.

W. J. Metzgar's No. 2-A McDaniel, NE SE SE Section 6-14-19, was dry and abandoned at 878 feet.

The Gled Oil Co. completed a good well in No. 18 Fox, 220 feet south and 250 feet west of C Section 22-13-14. Wilcox sand was found at 2,247-61 feet. It was given a small shot and the well made 250 bbls. in 24 hours. Same company is rigged up on No. 1-A Manuel, NW cor. SE Section 22-13-14.

L. Steckoll and others have machine in for No. 1-A Hen, CEL W half SE NW Section 13-11-11.

Minnehoma Oil Co., which has been drilling a deep test in Township, 11-11, concluded that it had gone deep enough and was plugging back. Choosing an old oil well, No. 2 Grayson, NW cor. SE Section 31-11-11, total depth 3,042 feet, it deepened to 3,909 feet. On the way down it found sand at 3,107-35 feet and 8,000,000 feet of gas, and a hole full of water. Six-inch pipe was set at 3,214 feet. Hunton lime was found at 3,610-25 feet, with 3,500,000 feet of gas. At 3,635 feet the well showed 7,000,000 feet of gas. Sylvan shale was topped at 3,646 feet and Viola lime at 3,771 feet. Five-inch casing was set at 3,775 feet and Wilcox sand containing salt water was drilled at 3,819 feet. The hole was plugged back to 3,782 feet.

Oklahoma Oil Corp. and Vincent were building rig for No. 1 Henry, NW SE NW Section 1-11-12.

Southern Fields

Farlyn Oil Co.'s No. 15 Seay, 665 feet south and 980 feet east of C Section 3-7s-5w, was completed. It pumps 25 bbls. per day from sand at 1,040-83 feet. Same company has rig up for No. 16, 150 feet south and 728 feet east of C Section 3-7s-5w.

Newson and others' No. 1 Ayers, SE NE SW NE Section 25-7s-5e, Marshall County, was dry and abandoned at 500 feet. In the same area, C. H. Choffield has made location for No. 3 Little, CWL SE SE NE Section 25-7-5e.

Shasta Oil Co.'s No. 15 Patterson, CSL SE NE NW Section 1-2s-10w, Cotton County, was completed. It is a 40-bbl. well at 2,211-18 feet.

Shasta Oil Co.'s No. 3 Whitehead, CSL SE NE NW Section 1-2s-10w, started at 20 bbls. a day from sand at 2,207-25 feet.

Mudge Oil Co. and others' No. 12 Cobb, C NE NE Section 1-2s-5w, Stephens County, is estimated as a 10-bbl. well at 711-50 feet.

Walter Neustadt's No. 3 fee, SE NE SW SW Section 3-1s-3w, Tussey area, Carter County, was drilling at 1,520 feet.

REVISED FIGURES FOR CANADA

OTTAWA, Ontario, Dec. 16.—Final revised figures dealing with operations of the petroleum and natural gas industries in Canada in 1932 have just been issued. They show that the natural gas industry, with 2,418 wells, employed $75,187,066 capital with 1,351 employes and $1,738,949 salaries and wages. Income from sales was placed at $8,188,966.

In the petroleum industry there were 2,210 wells. Some $48,568,562 capital was engaged, with 655 employes and $776,163 wages. The sales income was $3,467,538. This does not include, of course, the refining branch of the industry.

Two Prospective Fields in Northern Bee County; Small Extensions in Government Wells Field

By B. D. STEVENSON
Staff Correspondent, Southwest Texas Fields

SAN ANTONIO, Tex., Dec. 18.—Two new fields in northern Bee County are prospective. Dash Production Co., subsidiary of the Luling Oil & Gas Co., drilled No. 1 Ruhman, 525 feet from west line and 150 feet from north line of Block 7, of Thurston Subdivision, 5 miles northwest of the Pettus Field, and has the Pettus sand at 3,195 feet which tested 700 pounds in seven minutes with an odor of oil with the gas and has set casing. It is approximately 4 miles northwest of the Cosden Pool where the Pettus sand is found at about 3,600 feet. It is about 2 miles southwest of a test drilled in southern Karnes County a few years ago by the Fort Bend Oil Co. on the Newberry farm that got some gas at around 2,960 feet. Later, 210 feet from the Fort Bend well, Nichols drilled his No. 1 Newberry and had sands at 2,988-95 feet and again at 3,117-57 feet but in each case tested salt water. They are about in the trend with the Dash Production Co. test.

About 4 miles southeast of the Pettus Field, McLain's No. 1 Weiss, previously reported as making a gas well, has gauged 1,250,000 feet of gas and 12 bbls. of 71 gravity gasoline daily in the Pettus sand at 4,190-4,208 feet, and McLain is arranging to drill another test at once. In the Pettus Field this sand is had at about 4,000 feet or slightly less.

About 1 mile due east of nearest production, United Production Co. is working over No. 3 Ray which is just over the line in Goliad County and which in the early days of the Pettus district and before the Pettus Field was really discovered, was drilled to 6,054 feet and made around 15 bbls. of oil daily initially. It is being plugged back to the Pettus sand at 4,045 feet. United Production Co. owns the acreage between it and the field with no dry holes intervening.

Dash Production Co. has a block of 6,000 acres surrounding its well in a solid block except for 200 acres which went to the United Gas Co. for fuel for drilling the well. The test was drilled in 12 days.

One other wildcat is getting started along the line of play of the Dash Production Co.'s No. 1 Ruhman, which normally would pick up formations at somewhere around the same depth. It is Bunte's No. 1 Hiltgartner in DeWitt County, 3 miles southeast of Nordheim and 25 miles northeast of the Dash Production Co.'s test. It was down about 1,000 feet at the close of last week.

Duval County

Several small extensions, all more or less important, occurred in the Government Wells district the past week. K. O. T. Oil Co.'s No. 2 Lundell came in for a 50-bbl. oil well in sand at 2,227-35 feet with a 2-foot shale break at 2,246 feet. It may mean quite a little as to the southwest end of the North Government Wells Pool. It is a south offset to No. 1 which is a gas well and there is a dry hole a quarter of a mile due south of it. K. O. T.'s No. 2 Lundell is the farthest southwest producer and a mile of territory between it and the field with three gas wells and three other oil wells the only other development in the mile of territory.

At the north end of the South Government Wells Field and a half mile west of southernmost production of the original Government Wells Pool, DeLange brought in his No. 2 Lundell in Survey No. 60, the next south of No. 48, for 100 bbls. daily in sand at 2,178-2,220 feet. No. 1 DeLange came in a few weeks ago about 1 mile from production and it was uncertain what the situation was it had uncovered. It now seems evident from wells completed between it and the South Government Wells Pool that it ties in with that and No. 2 is a further extension to the northwest.

Magnolia Petroleum Co. has completed three producing oil wells on the secon row across the north end of the field and the size of the wells fails to indicate anything to the effect that the field is going to chop off. Magnolia owns everything for a mile north and from locations announced it would seem intends to to keep developing its lease north through Survey No. 208. Humble has started on a north and south row on the east side of the north end and completed No. 25 Hahl for 47 bbls. hourly which is about as big as most of the wells in the field offered for initial production.

The important news waited for in the northern Duval district is O. W. Killam's No. 3 Wood-Welder, in Survey No. 102, located 3 miles north and a little east of the North Government Wells production, in the Government Wells sand at 2,073 feet. It had a good showing and tried to set casing but failed to get on bottom and is reported milling out the casing. This necessarily delays the test.

Northern Duval County and southern McMullen County have probably been the scene of as much difference of geologic opinion as any area in Southwest Texas and any theory advanced is subject to severe criticism but the knowledge of the area that has been accumulated within the last year or two is such that operators are able to find production with increasing frequency.

The two major ideas are production along faults and production on structures and combinations of the two conditions. If Killam makes a producer of No. 3 Wood-Welder it will attract increased attention and also help to clear up the situation as to the geology of the region.

DeSoto Oil Co. recently made location for its No. 3 Wood-Welder, in Survey No. 211, about 8,000 feet southeast of Killam. No. 3 is a little east of No. 2 which made some oil and No. 2 is 660 feet east of No. 1 that made gas. On the usual theory and experience that oil is east of the gas and down the dip the location has been made for No. 3.

However, about a mile west of DeSoto's gas well, Sun got a small oil well in the same Government Wells sand horizon and a line from the Sun well in Survey No. 78 run northeast to Killam's No. 3 Wood-Welder is approximately 1 mile west of the DeSoto wells and some believe Killam's No. 3 Wood-Welder and Sun's No. 1 Duval County Ranch Co., mark approximately the line of a fault and that a pool will be found between that line and the DeSoto wells.

Because of the production in the Sun and DeSoto wells this pool has been named the Ignacio Pool and it is believed it will not connect with the Eagle Hill Pool to the north which some believe is a structure north with the North Government Wells on the south also thought by some to be a structure.

The Stewart-Reynosa or northwest extension of North Government Wells may be a faulted proposition also.

Duval Wildcats

Eaton's No. 1 Herbst, in Survey No. 71, 7 miles east of the Government Wells line, has started to drill and is down a few hundred feet. The location was announced several months ago and it has been standing since waiting for a contractor. Continental Oil Co. bought a considerable interest in the block of leases.

At present there are only a few wildcats in Duval County that are active outside of the Government Wells play. Edwards is drilling a wildcat on the Palangano Dome at Benavides. Smith's No. 1 Holzapfel, in the extreme northwest corner of the county, is drilling below 1,800 feet; Whitting and others are drilling at below 1,800 feet in No. 1 Duval County Ranch Co., in Survey 196 west of the Kohler Field, and P. H. Wilson spudded in No. 1 Withers close to the west line of the county and due west of Government Wells.

Starr County

Sun Oil Co. got one gas well and one dry hole in the Cuevitas Pool in northwestern Starr County. No. 8-A Guerra on the south side of the field made a gas well and No. 3-B on the west side is a dry hole. Sun has not moved very far from the discovery well in any direction in the development of the new pool. The greatest length of the field is about 6,000 feet northwest and southeast and about 4,000 feet in width northeast and southwest. The field as marked by tests drilled has three gas wells on the southwest side of the field, two dry holes to the northwest about half a mile apart and a dry hole on the southeast and a dry hole on the northeast.

Mims and others have started their No. 1 Guerra about 4,500 feet northwest of the nearest producer but cut off with Sun's No. 1-B and No. 3-B Guerra each of which is dry.

Balcones Fault Zone

Another wildcatter has joined the crowd hunting for production in Edwards lime in Bexar County. Thomas Gorton made location and spudded in No. 1 Edward Jackel in western Bexar County, 18 miles west of San Antonio and in the Baker Survey.

Of the other Edwards lime activity, Humble is down around 2,700 feet in central Wilson County; Amerada is still fishing in No. 1 Doerring in southwestern Frio County; Webster is standing at 2,150 feet in Caldwell County; Potter spudded in and down 1,000 feet in No. 1 Greenwood, south of Seguin in Guadalupe County.

Johnson's No. 1 Willow Springs, just east of the city limits of San Antonio, tested salt water in the Trinity at 1,936-80 feet and is drilling deeper. If he fails to get anything he may plug back and test the Trinity again. It had a showing of oil and set casing on the benefit of the showing but may be too deep.

Wildcat Operations in Southwest Texas

Week Ending December 16

Company, well, farm name, section and block—	Remarks:
ATASCOSA COUNTY	
E. O. Burton's No. 1 Blankenship, 1,470 ft. from NW line, 1,830 ft. from SW line of 320-ac. tract, in T. Orr Sur. No. 176	T.D. 250 ft.; standing.
Dan McMahan's No. 1 Smith & Mowinkle, 245 ft. from NE line, 2,300 ft. from SE line of Alexander, Crain, Harris & Brooks	T.D. 4,200 ft.; abd.; Mowinkle will convert it into a sulphur wtr. well.
BASTROP COUNTY	
Three Oil Co.'s No. 1 M. Ingram, 1,250 ft. from SW line, 940 ft. from SE line of tract in M. Morgan Sur.	Dropped till work is resumed.
BEE COUNTY	
Dash Prod. Co.'s No. 1 Ruhmann, 525 ft. from W line, 150 ft. from N line of lease in J. M. Thurston Sur.	T.D. 3,195 ft.; tested 700 lbs. in 7 min.; running csg.
Elbert Jeanes' No. 1 G. L. Courtney, 1,600 ft. from E line, 330 ft. from S line of tract in F. A. Kerr Sur.	Rigged up.
W. P. McLain's No. 1 Weiss, 400 ft. E of line between E. S. Price's Nos. 1 and 2 Weiss	T.D. 4,525 ft.; comp. 1,250,000 ft. gas; 12 bbls. of 71 gravity gasoline daily with 1,150 lbs. working pressure.
BELL COUNTY	
Gus Winston et al's No. 3 Warrick, 100 ft. N of James Scroggins' No. 1 Warrick, in Elijah Ingram Sur.	T.D. 1,930 ft.; drlg.
R. S. Wilson's No. 1 Davenport, 200 ft. from W line, 700 ft. from S line of J. L. Herred Sur.	T.D. 1,235 ft.; standing.
BEXAR COUNTY	
C. I. Albertson's No. 2 C. Hoke estate, 675 ft. from E line, 250 ft. N of Medina River in Jose Maria Barrera Sur.	T.D. 1,134 ft.; being treated with acid.
Foster et al's No. 1 Appelt, 1,750 ft. from N line, 300 ft. from E line of Anton Ripps' 161.75-ac. tract in Juan Manuel Urriegas Sur. No. 32	T.D. 460 ft.; drlg.
S. W. Forrester's No. 1 Appelt, 160 ft. E of Corpus Christi Road, 1,666 ft. S of N line of tract in M. Urregias Sur.	T.D. 460 ft.; drlg.
Thos. Gorton's No. 1 Edward Jackel, 600 ft. from N line, 300 ft. from E line of tract in Baker Sur.	Spudded in.
Motes-Campbell's No. 2 Stumberg, 450 ft. from N line, 450 ft. from W line of S. Stumberg 140-ac. tract in F. Rolen Sur. No. 48	T.D. 597 ft.; abd.; dry in shale; stained with oil.
George L. O'Neill's No. 1 Neimann in Juan Montez Sur. No. 6	T.D. 945 ft.; drlg.
J. W. Johnson's No. 1 Willow Springs, 150 ft. from N and W lines of lease in B. Munoz Sur. No. 161	T.D. 1,985 ft.; tested S.W. in Trinity; drlg. ahead.
D. C. Pegg's No. 1 Julius Doehne, near Humble refinery.	T.D. 1,369 ft.; comp. in Edwards as wtr. well.

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Roanoke Geophysical Prospect Oligocene Test Fails to Open New Field on Gulf Coast

By W. A. SPINNEY
Gulf Coast Bureau, The Oil and Gas Journal

HOUSTON, Tex., Dec. 18. — Efforts of Humble Oil & Refining Co. to open another new Gulf Coast field located on the Roanoke geophysical prospect in Jefferson Davis Parish, Louisiana, met with failure when the company's No. 2 Devilbiss tested salt water. The well was in an Oligocene sand at 8,249-62 feet and previous to the test showed considerable oil. If it had made a well it would have been the deepest production on the coast. A string of casing consisting of 8,243 feet of 7-inch pipe, is in the hole. One joint of 4¾-inch screen and five joints of blank and 2½-inch tubing, which were run for the test, now are being pulled and the hole will be drilled deeper.

This is the seventh test drilled on the Roanoke prospect and the second for Humble Oil & Refining Co. Previous development was by the former Vacuum Oil Co., which discovered the prospect, drilled five tests and turned the block to Humble Oil & Refining Co. Several of those tests found sands showing oil and one swabbed a small amount of oil.

Previous deepest production has been at Buckeye, Matagorda County, Texas, where United North & South Development Co. has brought in several wells from a 7,900-8,000-foot horizon. At Jennings, East Hackberry and Sweet Lake in southern Louisiana production has been found in each in horizons from 7,400-7,500 feet. Much deeper tests, however, have been drilled both on the Louisiana and Texas coast.

New Sand at Iowa

A new oil sand, 300 feet shallower than the main pay at 7,000 feet, has been found in the Iowa Field, Calcasieu Parish, Louisiana, by the Shell Petroleum Corp.'s No. 1 Tuten, the most southerly test in the field. The well now is in process of completion. A string of 9⅝-inch casing was cemented at 6,591 feet above the 9 feet of oil sand penetrated from 6,604-13 feet. Plug has been drilled and a joint of screen has been run. Fifteen of the 16 wells now producing in the Iowa Field are in a deep pay at 6,900-7,000 feet, the one exception being Shell Petrolum Corp.'s No. 6 Heyd, a mile west and slightly north of the No. 1 Tuten. This well is in a Miocene sand at 4,670 feet. However, Shell Petroleum Corp.'s No. 5 Heyd, a quarter mile north of No. 1 Tuten, produced oil and gas from the 5,500-foot sand, before being drilled deeper to the 7,000-foot level.

Shell Petroleum Corp.'s No. 1 Ardoin, an offset to Barnsdall Oil Co.'s No. 1 Fontenot, a recently completed producer, is a derrick. It is on the east side of the field in Jefferson Davis Parish. The field lies on sides of the boundary line between Calcasieu and Jefferson Davis Parishes.

East Hackberry

In the East Hackberry Field in Cameron Parish, Union Sulphur Co.'s No. 8 Humble, on the northwest flank of the East Hackberry Dome was shut in during the week as a gas well from sand at 5,956-68 feet. In the same field Francis Little's No. 1 Duhon was completed for 45 bbls. a day flowing from a total depth of 3,056 feet. Union Sulphur Co.'s No. 1 Barbee, on a 20-acre tract, was drilling at 6,950 feet, with nothing showing. This test is east of where two other tests were drilled into an oil sand below 8,300 feet on the Pure Oil Co.'s lease by the Union Sulphur Co.

Lockport

In the Lockport Field, Calcasieu Parish, Magnolia Petroleum Co.'s No. 4-A Watkins fee, in Section 9-10s-9w, was drilling at 6,395 feet at latest report, and is one of the deepest tests in the original part of the field. Other operations in the Lockport Field are confined to the western extension area. Magnolia Petroleum Co.'s No. 11 Bordages, was drilling in shale at 4,950 feet. Union Sulphur Co.'s No. 1 Farquahar was drilling at 4,950 feet.

Sweet Lake

Pure Oil Co. plans a deep test on the south side of the Sweet Lake Field in Cameron Parish. A derrick has been erected for No. 12 Yount Lee fee. The goal is to drill the test to a depth of 10,000 feet. The test is about 800 feet south of the latest completion in the field, the same company's No. 11 Sweet Lake, which was also started for the 10,000-foot level, but was plugged back and completed as 1,400-bbl. producer near 7,200 feet after drilling to a depth of 8,070 feet.

Leesville

In the Leesville Field, Lafourche Parish, Gulf Refining Co.'s No. 2 City of New Orleans, in Section 26-21s-22e, was completed during the week, making 240 bbls. of net pipe line oil through a one-half inch choke from a total depth of 3,712 feet. The Texas Co.'s No. 9 L.L.&E., in Section 27-21s-22e, also was completed making 1,600 bbls. of pipe line oil through a one-half inch choke from a total depth of 3,716 feet.

In East Baton Rouge Parish, the British American Oil Co.'s No. 1 Louisiana Investment in Section 6-8s-1e, was abandoned at a total depth of 6,515 feet as a dry hole. In Vernon Parish, Glen J. Smith's No. 1 Fullerton Mineral Co. in Section 32-1n-5w was abandoned at 5,340 feet as a dry hole.

The wildcat test of the Gulf Refining Co. on the Hayes prospect in Calcasieu Parish was drilling late in the week at 6,396 feet, with nothing showing.

Greta Field

The Greta Field in Refugio County in the lower Gulf Coastal district had another interesting week. The field was extended to the south and to the north, and the Railroad Commission granted an increase in the allowable production over its previous allowable.

United Production Co.'s No. 5 Lambert, E. W. Harper Survey, extended production approximately a quarter of a mile to the south toward the old Fox Field, when it was completed for 250 bbls. a day from a new producing horizon for the Greta Field found at 3,486-3,501 feet.

Stanolind Oil & Gas Co. and Atkins and O'Neil's No. 1 Welder, in the J. T. McGrew Survey, which, on a recent drill stem test, showed 30 fourbles of clean oil in 10 minutes, was waiting for cement to set after setting casing on top of the sand at 4,379-99 feet.

Offsetting this well to the west, Humble Oil & Refining Co. is rigging up at No. 1 Welder on a 27-acre tract that company recently purchased for the reported consideration of $1,000 an acre cash and $1,000 an acre in oil.

The Texas Railroad Commission in an order issued December 15, increased the allowable production from the Greta Field to 8,500 bbls. from the previous allowable of 7,500 bbls. Operators at a hearing held in San Antonio on December 5 petitioned the commission for an increase, due the large number of completions and to the fact the operators have never allowed the production to reach 10,000 bbls. daily.

Hewitt and Daugherty's No. 2 M. F. Heard, in the C. S. Hardwick Survey, was completed making 125 bbls. of pipe line oil through a three-eighths inch choke from sand at 4,350-90 feet. This well also extends the production a location to the south.

Nesral Oil Co.'s No. 1 V. E. Heard, in the M. J. Ximenes Survey, on the east side of the field, is waiting for cement to set after it was necessary to recement. The casing has been set on top of a sand showing oil at 5,998-6,010 feet. This is a new depth for oil sand in the Greta Field, as the previous deepest oil sand had been found at 5,919 feet.

The same company's No. 1 Ira Heard, an east offset to the only deep sand producer in the field, apparently missed the sand found in the offset producer and was drilling at 6,071 feet at latest report.

Colorado County

A wildcat test in Colorado County, Weimer Development Co.'s No. 1 Janecka, in H. Austin Survey, was abandoned at a total depth of 4,516 feet. It is the third test to be drilled and abandoned in the area by the same company. The original test, No. 1 Brandt, was abandoned at 6,200 feet, and the Turner test, the second wildcat, at 4,500 feet.

Fort Bend County

Quintana Oil Co.'s No. 1 Great Southern, a wildcat test in the Pilant Lake area, Fort Bend County, was abandoned during the week at a total depth of 8,129 feet. The same company has made another location for a test about 6,000 feet northeast of the above test on the No. 1 Wood-O'Connell-Miller tract.

Jefferson County

In Jefferson County, Shell Petroleum Corp. and Sun Oil Co.'s No. 1 Paggi, a wildcat test near China, was abandoned at a total depth of 7,367 feet. This test found a sand showing oil at 6,005-31 feet where several unsuccessful attempts were made to complete a producer.

Wharton County

Pure Oil Co.'s No. 1 Stewart, in Louise area, of Wharton County, was completed as the first commercial well in that area. It made 234 bbls. of pipe line oil the first 24 hours from sand at 5,966-76 feet.

Conroe Probably Defined

Present indications are that production in the Conroe Field, Montgomery County, has been defined by the finding of salt water in wells on the edge of the field. With the exception of possible extension to the south and the possibility of the Cockfield sand on the west side of the field the only future drilling activity left at Conroe is the development of inside locations. There are at present a total of 662 wells completed in the field which have a daily allowable of 49,000 bbls. During the week the Texas Railroad Commission revised the per acre allowable in the Conroe Field as follows: 1 acre, 9 bbls.; 2 acres, 10.8 bbls.; 3 acres, 12.7 bbls.; 4 acres, 14.5 bbls.; 5 acres, 16.3 bbls.; 6 acres 18.2 bbls.; 7 acres, 20 bbls.; 8 acres, 21.8 bbls.; 9 acres, 23.6 bbls.; 10 acres, 25 bbls; 11 acres, 27.3 bbls.; 12 acres, 29.2 bbls.; 13 acres, 31 bbls.; 14 acres, 32.8 bbls.; 15 acres, 34.6 bbls.; 16 acres, 36.5 bbls.; 17 acres, 38.4 bbls.; 18 acres, 40.2 bbls.; 19 acres, 42 bbls. and 20 acres, 43.8 bbls.

At this time there are only three wells

Gulf Coast Fields and Wildcats

Week Ending December 16

DAMON MOUND—BRAZORIA COUNTY

Company, farm and location—	Remarks:
Intercoastal Oil Co.'s No. 11 Wisdom, 350 ft. E of No. 6, Blk. 51, Lot D, A. Durst Sur.	Drlg. 2,289 ft.

MANVEL—BRAZORIA COUNTY

Texas Co.'s No. 6 Belcher, H. N. Little Sur., S 42 deg. W 2,400 ft., S 48 deg. E 400 ft. from N cor. lease.	T.D. 5,476 ft.; standing.
Texas Co.'s No. 6-B Belcher, 880 ft. NW, 900 ft. NE from S cor. of H. N. Little Sur.	Drlg. shale 3,918 ft.
Texas Co.'s No. 7 Belcher, 1,430 ft. S 48 deg. E, 900 ft. W 42 deg. E from NW cor. of W. T. Belcher "A" lease, H. N. Little Sur.	Drlg. shale 4,433 ft.
Texas Co.'s No. 1 Ellis, 1,660 ft. N, 807 ft. S, from NW cor. of lease, H. N. Little Sur.	T.D. 6,045 ft.; P.B. to 6,020 ft.; coring.

BARBERS HILL—CHAMBERS COUNTY

Bashara Oil Co.'s No. 2 Tarbutton, Henry Griffith League (W.O.)	Comp. 768 bbls.; 4,286 ft.
Mills Bennett Prod. Co.'s No. 5 Fisher, Wm. Bloodgood Sur., 75 ft. N line, 191 ft. W of No. 4	Rigging up to W.O. 5,303 ft.
Mills Bennett Prod. Co.'s No. 1-D Barber, 75 ft. S, 65 ft. W of NE cor.	Drlg. salt 1,696 ft.
Mills Bennett Prod. Co.'s No. 4 Means, 150 ft. W of No. 3, Henry Griffith League	Rigging 4,406 ft.
Humble O. & R. Co.'s No. 3-C Kirby, H. Griffith Sur., 311 ft. from SE line, 659 ft. NE line of lease	Set screen; washing well; T.D. 4,287 ft.
Sinclair Prairie Oil Co.'s No. 15 Wilburn, Henry Griffith League, 150 ft. W of No. 14	Drlg. lime 3,422 ft.
Sinclair Prairie Oil Co.'s No. 17 Wilburn, 125 ft. N of S line, 150 ft. W of No. 16, H. Griffith League	Derrick.
Sun Oil Co.'s No. 14 Wilburn (W.O.), Henry Hodges Sur.	Rigging.
Sun Oil Co.'s No. 16 J. Wilburn, Henry Griffith Sur. (W.O.)	Comp. 1,008 bbls.; ¼-in. choke, 4,260 ft.
Sun Oil Co.'s No. 17 Wilburn, Henry Griffith League, 150 ft. W of No. 6 and 50 ft. S of N line	Drlg. salt 1,402 ft.
Sun Oil Co.'s No. 18 Wilburn, Henry Griffith League, 50 ft. N of S line, 50 ft. E of W line of lease	Drlg. salt 1,941 ft.
Sun Oil Co.'s No. 19 Wilburn, 220 ft. E of W line, 343 ft. S of N line, William Hodges Sur.	Derrick.
Texas Gulf Prod. Co.'s No. 8-H Kirby, 333 ft. W of No. 6-H, 70 ft. N of S line, Henry Griffith League (W.O.)	Drlg. shale 5,024 ft.

(Continued on Page 65)

in the Conroe Field that are being produced artificially. These wells are West Production Co.'s No. 1 Foster Lumber Co., which is on the beam; Sun Oil Co.'s No. 3 Stewart, and Tide Water Oil Co.'s No. 3 Granger, these being produced with an automatic plunger lift, which is similar to the gas lift. Except for the wells that are shut in, all other producers are flowing naturally.

Humble Oil & Refining Co. and others' relief well, which is being drilled in an attempt to kill Harrison & Abercrombie's crater producer that has been flowing wide open since June, was down 4,025 feet on the last reports and if no unforeseen difficulty arises it should reach the sand in the next 10 days.

Livingston Field

During the week new rules were issued by the Railroad Commission for wells in the Livingston Field in Polk County. An amended order was issued based on testimony taken in Houston last November. The order creates a drilling unit of 20 acres by spacing all wells 466 feet from property lines and separating wells on the same property by 933 feet.

Following the recommendation of representatives of operators in the field, the commission, allowed a differential of 5 acres in the proration plan, which allows operators of 25-acre tracts to drill one well only, but to produce that well in proportionate excess to an offset well drilled on a 20-acre unit. Under the order, wells on 20-acre units are permitted to produce 158 bbls. of oil daily. Wells in the Livingston Field are given the same gas-oil ratio as wells in the Conroe Field, 2,000 feet of gas per barrel of oil produced.

Of particular interest in the Livingston area is the announcement of a location by the Humble Oil & Refining Co. for No. 8 Grandbury. This is 2 miles west of production of the field and more than a mile west of the same company's No. No. 3 Grandbury, which was abandoned during the week at a total depth of 5,337 feet. No. 3 Grandbury ran low and found salt water in the producing horizon of the field.

Shell Petroleum Corp.'s No. 1 Duff, in the north end of the field, offsetting the Polk County Oil Co.'s No. 2 Davis-Holmes, one of the highest wells in the field on structure, was drilled to a total depth of 4,587 feet, where it showed salt water. It will be plugged back to test a showing of gas at 4,341 feet. The same company's No. 1 Jones, which is the west offset to the Humble Oil & Refining Co.'s No. 1 Grandbury, a 1,000-bbl. producer, was drilling at 4,400 feet without showing any oil or gas, which is below the depth Humble completed its well.

An interesting wildcat test in Polk County is Dick Schwab's No. 2 Kirby, located about 9 miles southeast of production at Livingston. The test is nearing the depth where it was expected to produce and was drilling at 4,690 feet on last reports. A drill stem test was made of formations at 3,887-4,060 feet, where it showed considerable gas and mud cut with gas.

Tomball More Active

Development of the Tomball Field has become more active and at this time there are 10 tests drilling and three derricks up. Production in the field was extended to the east a quarter of a mile by the completion of Humble Oil & Refining Co.'s No. 1 Kuehn, W. Usener Survey, which made 27 bbls. an hour through a one-half inch choke from a total depth of 5,553 feet.

Activity in the Tomball Field is scattered over considerable territory extending east and west about 4 miles and north and south about 3 miles, and extending across the county line north into Montgomery County from Harris County.

Hull Field

Development in the extension area of the Hull Field in Liberty County continues strong, with a total of 10 tests drilling on this date. The only test completed during the week was Sun Oil Co.'s No. 1 Carr, which made 1,240 bbls. of oil through a one-half inch choke, from the Jackson at a total depth of 4,778 feet. The only obstacle that is retarding a more extensive drilling campaign is the strict proration of production in the Hull Field.

Old Humble Field

A producer was completed in the old Humble Field in Harris County during the week. It was Wilson Petroleum Co.'s No. 1 Cicero, a workover, drilled to a total depth of 3,889 feet where it is pumping 100 bbls. of net oil a day, while pumping on the beam.

Shipments From Gulf Coast Ports Show 400,000 Bbls. Decline in October

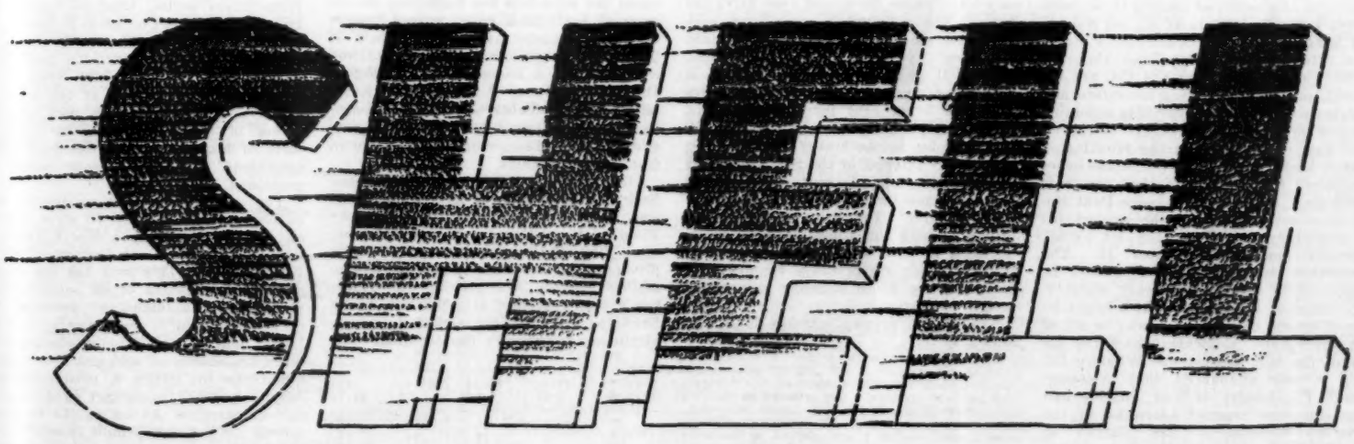
HOUSTON, Tex., Dec. 16.—Water shipments of crude oil and refined products from Gulf Coast terminals and ports during October declined approximately 400,000 bbls. from the previous month. This was a reflection of the strict enforcement of proration of crude oil production in the East Texas Field.

Shipments of crude oil account for the largest part of the decline movement of refined products showing a slight increase.

Shell Petroleum Corp. shipped from its Houston refinery 7,758 long tons of petroleum coke during October. The following table shows the shipments by companies and terminals:

Company and terminal—	Crude		Refined		
	Coastwise	Export	Coastwise	Export	Total
Atlantic:					
Atreco	1,152,833.19	102,120.01	.....	15,652.21	1,270,605.41
Harbor Island	333,759.89	.....	.....	.....	333,759.89
Texas City	430,924.23	.....	5,425.09	.....	436,349.32
Gulf:					
Port Arthur	595,415.69	.....	1,745,062.28	40,351.07	2,380,829.04
Humble:					
Baytown	877,771.00	.....	1,901,920.40	615,333.82	3,395,025.22
Harbor Island	1,321,950.09	.....	.....	.....	1,321,950.00
Ingleside	66,659.00	.....	.....	.....	66,659.00
Neches	37,293.00	.....	.....	.....	37,293.00
Texas City	207,116.00	.....	.....	.....	207,116.00
Magnolia:					
Beaumont	†316,925.31	.....	†2,145,017.24	.....	2,461,942.55
Pure:					
Smith Bluff	475,180.00	.....	384,993.90	.....	860,173.00
Shell:*					
Houston	99,062.12	73,707.30	1,564,173.19	.....	1,736,942.61
Norco	.....	.....	353,801.38	76,564.72	430,366.10
Standard:					
Baton Rouge	567,285.00	38,111.00	1,069,520.00	642,756.00	2,317,672.00
Sun Oil Co.:					
Sabine Pass	1,685,490.72	.....	.....	.....	1,685,490.72
Texas Co.:					
Port Arthur	828,122.00	791,130.00	1,975,885.00	379,814.00	3,965,951.00
Miscellaneous:					
Houston	2,471,139.00	248,168.70	1,022,576.41	446,251.18	4,188,135.29
Total October	11,466,926.15	1,253,237.01	12,168,373.99	2,207,723.00	27,096,260.15
Total September	12,110,209.31	1,456,575.40	12,958,200.67	1,876,150.27	27,501,135.65
Difference	643,383.16	203,338.39	110,173.32	331,572.73	404,875.50

*Shell Petroleum Corp. shipped coastwise 7,758 long tons of petroleum coke. †Includes export shipments.



Code Enforcement Suit Begun at Los Angeles; Tideland Operators Relieved by State Court

By L. P. STOCKMAN
Staff Correspondent, California Fields

LOS ANGELES, Calif., Dec. 18.—The first of a series of suits to force compliance with the Federal oil code was filed in the U. S. District Court in Los Angeles December 14 by U. S. Attorney Pierson M. Hall, representing Attorney General Homer S. Cummings. The suit filed in the Federal court charges the Wilshire Oil Co., its officers and subsidiary companies with violation of the code and petitions the court to restrain the defendants from producing more than their prescribed quota of crude oil in the Huntington Beach and Santa Fe Springs Fields. The defendants are the Wilshire Oil Co., Bandini Petroleum Co., Commodore Petroleum Co., Ambassador Petroleum Co., Wilshire Annex Oil Co., George and Alfred Machris and several unnamed individuals. Paving the way for future action against other operators, the complaint also named four "Doe companies," six "Richard Roes," and four syndicates named as "Black, White, Blue, and Green."

In the suit filed by the Government, it is alleged that the Wilshire Oil Co. and its subsidiaries had produced more than 800,000 bbls. of crude oil in excess of production quotas during the past three months. The complaint alleges that the acts of the defendants constituted "an unreasonable and unwarranted waste and depletion of the natural resources of the United States," and further that the defendants had indulged in "unfair competitice practices which tend to promote the growth of monopoly, create unemployment and increase the national emergency." U. S. Attorney Hall indicated that the filing of the action was merely the first of a series of actions to be instituted against violators of the oil code in all branches of the industry and stated that "the Government alleges that the actions of the Wilshire Oil Co. are demoralizing and disrupting interstate and foreign commerce and depriving adjoining landowners of their fair share of the oil and gas, particularly in the Huntington Beach Field, so as to prevent these other producers from finding outlets for their products." U. S. District Judge Paul McCormick set hearing on the request for a temporary injunction for 10 o'clock Tuesday morning, December 19. The complaint also asked that a receiver be appointed to enforce temporary restraining orders or injunctions which might be issued by the court against any or all of the defendants. Coincident with the filing of the suit against the Wilshire Oil Co., it was announced that Attorney Frank P. Doherty of Los Angeles had been appointed special assistant to the Attorney General in this district to launch a war against all oil producers alleged to be violating oil proration agreements under the NRA.

Tideland Litigation

The Superior Court at Sacramento, in interpreting a state statute, gave Huntington Beach operators declaratory relief in the litigation involving crooked hole drilling in the Seventeenth Street town lot area. The court held that the State could accept royalties from operators of wells that may be draining state tidelands regardless of whether the holes were vertical or deviated from the perpendicular. Subsequent to the declaratory relief given by the Superior Court at Sacramento, state officials released a royalty schedule predicated on daily well production and the prevailing price for crude oil. The table of royalties ranges from a royalty of 5 per cent on a 50-bbl. well when oil below 30 degrees A.P.I. is sold for 50 cents per barrel, to 66 per cent for a well producing 3,000 bbls. or more per day when crude oil is sold over $1.75 per barrel. The royalty, in accordance with the schedule issued by state officials, increases 1 pe rcent for each 100 bbls. until 500 bbls. of daily production is reached, after which the State's royalty increases 2 per cent for each 100 bbls. up to 1,000 bbls. After reaching 1,250 bbls. per day in the lowest price bracket, the royalty interest of the State increases at the rate of 4 per cent for each 500 bbls. increase in production up to 3,000 bbls. or over. The price factor is coordinated with the allowable daily quota of wells in such a way that when the price of crude oil increases, royalty payments to the State increase proportionately.

The State's royalty schedule is as follows:

Barrels per day—	$0.50	$0.51 .75	$0.76 1.00	$1.01 1.25	$1.26 1.50	$1.51 1.75	Over $1.75
	Price — Percentage of royalties						
0- 50	5	6	7	8	9	10	12
51- 100	6	7	8	9	10	12	14
101- 200	7	8	9	10	12	14	16
201- 300	8	9	10	12	14	16	18
301- 400	9	10	12	14	16	18	20
401- 500	10	12	14	16	18	20	22
501- 600	12	14	16	18	20	22	26
601- 700	14	16	18	20	22	26	30
701- 800	16	18	20	22	26	30	34
801- 900	18	20	22	26	30	34	38
901-1,000	20	22	26	30	34	38	42
1,001-1,250	22	26	30	34	38	42	46
1,251-1,500	26	30	34	38	42	46	50
1,501-2,000	30	34	38	42	46	50	54
2,001-2,500	34	38	42	46	50	54	58
2,501-3,000	38	42	46	50	54	58	62
3,000 and over	42	46	50	54	58	62	66

San Joaquin Valley operators, who received a substantial increase under the terms of the supplemental code used in California during November, have filed a vigorous protest with the central committee of California oil producers because of the severe reduction in allowable production allocated by the committee for the month of December. Due to dissatisfaction with provisions of the supplemental code of October 20, used during November, 1933, the proration committee discarded this complex formula and allocated the allowable for December on the original basis used with varying success earlier this year. At a meeting held at Taft and presided over by H. F. Owen as chairman, a committee consisting of D. K. McLennan, J. B. Wells, H. M. Morris, O. A. Taber and G. S. Follansbee, Jr., was appointed to contact producers in the district and assist them in filing their protests.

Honolulu Consolidated has pinched back the production of its No. 23, a recent completion in the Midway-Sunset Field of Kern County, to 975 bbls. per day. This well, in Section 14-32-24, is producing 555,000 feet of gas per day in addition to the 25.3 gravity oil. Honolulu's well, bottomed at 2,898 feet, is believed to have possibly picked up a new virgin zone, although the irregular condition of subsurface strata and lenticular conditions characteristic of the field preclude definite opinion at present. During November Standard Oil Co. cleaned out approximately 100 pumping wells in the Midway-Sunset Field and returned them to production. Some of these will undoubtedly be put back on the suspended list in the immediate future, due to the substantial reduction in the allowable quota of the Midway-Sunset Field subsequent to December 1. Standard's reconditioning work consisted of the restoration to production of 21 wells in Section 36-31-23; 7 wells in Section 30-32-24; 9 in Section 1-32-23; 13 in Section 15-32-24, and 6 each in Section 31-31-24, Section 9-32-24, Section 7-32-24, Section 5-32-24 and Section 17-32-24. The remaining wells put back on production were scattered over several adjoining areas.

Potential Producers

Production tests are expected to be conducted on two extremely important wells in California within 15 days, unless mechanical trouble develops. The first test is expected to be undertaken by Union Oil Co. within a few days and will be followed by a production test on another well conducted by the General Petroleum Corp. Union Oil Co.'s potential producer is No. 1 on Kern County Land Co. property in the Union Avenue district of Kern County. Union will either open up a new oil field at Union Avenue or greatly extend the proven limits of the Mountain View Field. Union's well is approximately 4½ miles northwest of Hogan Petroleum Co.'s discovery well in the Mountain View Field. Union will test the productivity of the Santa Margarita formation, from which Hogan Petroleum Co.'s discovery well is producing. Mohawk Petroleum Co. recently completed No. 1 Clendennen flowing 3,900 bbls. per day from the lower portion of the Kern River series at 5,692 feet. Located approximately 9,000 feet northwest of Hogan Petroleum Co.'s discovery and about 12,000 feet southeast of Union Oil Co.'s Union Avenue test, it is producing from the Kern River series, whereas Union and Hogan Petroleum Co. failed to find a sufficient thickness of oil sand in the Kern River to justify a production test. Both holes were deepened to the Santa Margarita. The significance of the oil sand found in Union Oil Co.'s well and the extent of the Mountain View Field is more or less enigmatical due to complex conditions which at present cannot be explained.

The second important production test to be conducted within 15 days will be on General Petroleum's No. 1 Berry, a deep test in the South Belridge Field of Kern County. This well has not shown any great thickness of oil sand but has shown such a high gas pressure the crew has found it necessary to use 80-pound mud to keep it under control. The ditch has shown oil and gas in sufficient quantities to justify a production test despite inability to extract solid oil sand in core samples. As far as can be ascertained, the last core sample showed brown shale to be predominating, although cores during the past 200 feet have shown a little sand and some shells. This tends to indicate that General Petroleum's well is probably in the transition zone between the brown shale and Temblor sand. The company is preparing to run in and cement a water string and contemplates making a production test within two weeks. The outcome will determine future operations as to whether any additional hole will be made for the present. Union Oil Co., on the other hand, will not make any additional hole in its Union

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	December 2 Total this week	December 2 Daily average	November 25 Total last week	November 25 Daily average	This year to date	Same time last year
Intercoastal-domestic—						
Crude oil	.....	.....	.....	.....	.....	213,322
Fuel oil	53,137	7,591	649,120	92,731	4,121,547	.....
Diesel and gas oil	.....	.....	.....	.....	1,227,048	1,293,790
Gasoline	120,945	17,278	79,918	11,417	10,185,159	7,326,170
Kerosene	.....	.....	.....	.....	906,294	201,722
Other finished oil	.....	.....	.....	.....	90,557	.....
Other unfinished oil	.....	.....	.....	.....	72,584	.....
Foreign exports—						
Crude oil	132,291	17,470	175,553	25,079	6,949,353	7,463,190
Fuel oil	271,295	38,756	232,996	33,285	7,422,872	7,399,357
Diesel and gas oil	130,902	17,272	205,918	29,417	3,288,855	2,538,708
Gasoline	125,236	18,462	78,129	11,161	5,231,150	7,874,919
Kerosene	10,302	1,472	24,098	3,443	1,826,397	2,725,099
Naphtha distillates	.....	.....	.....	.....	.....	120,075
Other finished oil	.....	.....	.....	.....	12,086	.....
Other unfinished oil	.....	.....	.....	.....	66,375	.....
Coastwise-domestic—						
Crude oil	.....	.....	208,571	29,796	6,100,392	13,032,783
Fuel oil	213,313	30,473	317,006	45,287	9,863,024	11,074,972
Diesel and gas oil	20,234	2,891	5,454	779	957,245	1,259,624
Gasoline	258,618	36,945	376,516	53,788	11,702,867	14,102,030
Kerosene	2,080	297	7,253	1,036	132,129	154,247
Naphtha distillates	.....	.....	.....	.....	27,651	.....

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Diesel and gas oil	.....	.....	15,842	2,263	619,539	650,980
Gasoline	.....	.....	.....	.....	804,548	1,162,057
Kerosene	.....	.....	.....	.....	482,430	232,391
Lubricants	.....	.....	7,405	1,058	41,339	31,804
Foreign exports—						
Crude oil	.....	.....	.....	.....	1,696,661	889,922
Fuel oil	.....	.....	.....	.....	1,795,231	964,102
Diesel and gas oil	.....	.....	40,094	5,728	947,740	693,627
Gasoline	.....	.....	.....	.....	3,657,056	3,716,315
Kerosene	.....	.....	53,180	7,597	982,000	987,399
Lubricants	.....	.....	11,541	1,649	127,518	30,094
Other finished oil	.....	.....	.....	.....	2,745	.....
Other unfinished oil	.....	.....	.....	.....	26,278	.....
Coastwise-domestic—						
Fuel oil	165,970	23,710	64,918	9,260	3,683,614	2,786,080
Diesel and gas oil	.....	.....	.....	.....	274,745	330,118
Gasoline	219,816	31,402	98,993	14,142	4,184,011	3,571,304
Kerosene	7,977	1,140	.....	.....	114,138	133,994
Lubricants	.....	.....	.....	.....	2,751	.....

Avenue test after landing the water string if the 35 feet of formation to be tested out results in commercial production.

Mountain View

Long Beach Petroleum Co. has completed No. 1 Vedder Petrol as a commercial producer in the Mountain View Field of Kern County at 5,906 feet. This well, in Section 29-30-29, was swabbed in flowing at the rate of 1,160 bbls. of 28.9 gravity oil per day after the 6⅝-inch water string had been found effective at 5,716 feet. Bankline Oil Co. has suspended drilling on No. 1 Symons, an outpost in the extreme southeastern part of the field, at 6,088 feet, when a formation test showed no oil or gas at 5,919 feet. Mohawk Petroleum, with two producing wells and one drilling well to its credit in the Mountain View Field, has staked location for No. 1 McKeon, a new well to be drilled in Section 24-30-28.

Milham Exploration Co. finished No. 1 Lincoln as a commercial gas producer in the Buttonwillow gas field of Kern County early in the week, and this new well showed a potential daily production of 12,800,000 feet of gas per day from 2,467 feet after the hole had been finished with a 6⅝-inch liner including 123 feet of perforated. The Milham interests have started rig construction for a well to be drilled in Section 8-28-23. In the Lost Hills Field, Associated Oil Co. is rotating in No. 1 Williamson at 6,650 feet and while a few minor showings have been logged to date, the company has not yet encountered a sufficient thickness of oil sand to justify a production test.

Kettleman Hills

North Kettleman Oil & Gas Co. made satisfactory progress in redrilling No. 1 Lillis-Welsh, the deep outpost in the extreme western part of the Kettleman North Dome Field. The company still has several hundred feet of hole to make before reaching a point equivalent to the original bottom, 10,944 feet, but may reach this depth before the close of the year unless something unforeseen develops. It is the present intention to land a secondary water string to definitely exclude all formations above the oil sand, with the result that the ultimate completion depth may not be reached until early in the new year. The progress recorded in this well since the recent resumption of drilling has been especially gratifying to the Union Oil Co., which a short time ago advanced $100,000 for a 50 per cent undivided interest in the Lillis-Welsh lease. The success of work accomplished to date is due in no small measure to the advice of Ed McAdams, president of the company. The Petroleum Securities has started rig construction for a new well to be drilled in Section 19-23-19, and drilling operations are expected to get under way within 15 days.

The new well being started in the Middle Dome of Kettleman Hills by the Petroleum Securities will ultimately become the property of the Middle Dome Corp. and future production will be distributed to owners of participating acreage on a pro rata basis. Unlike the unit plan of operation in the Kettleman North Dome Field, whereby the Kettleman North Dome Association, a co-operative organization, undertakes and prosecutes drilling operations, the program in the Middle Dome contemplates the drilling of wells by independent operators who will retain control of such projects until adequately compensated, after which the wells become the property of the Kettleman Middle Dome Association. This procedure was adopted by operators in the Middle Dome to prevent undue financial burdens on operators holding potentially productive acreage. The present well being started by the Petroleum Securities is expected to be finished in the productive Temblor and will continue to be the property of the Petroleum Securities until the cost of this well and the expenditure incurred in the drilling of the company's first test will have been liquidated. Standard Oil Co., in like manner, will be permitted to drill a second well in the Middle Dome, but this project, like the company's present producer, will become the property of the Kettleman Middle Dome Association after all drilling and production expenses have been liquidated. Bolsa Chica Oil Co. also has the privilege of drilling a new well in the Middle Dome under the same conditions as the Standard and Petroleum Securities.

Montebello

A new deep test got under way in the Montebello Field of Los Angeles Basin early in the current week when the Community Oil Co. resumed drilling operations following a suspension of several months. This increases the total to three wells headed to the deep Cruz zone discovered by Universal Consolidated several months ago. Operators in the Montebello Field are refraining from deep zone exploitation until conditions improve, despite the fact some of them could use this flush production to advantage. In the Richfield district, Associated is plugging back No. 1-A Bayha, following inability to develop commercial production at 4,750 feet. Union Oil Co. is expected to complete No. 4 A. & P. in the Breen zone at Richfield during the next few weeks, as the company only has a few hundred feet of hole to make before completion. In the Santa Fe Springs Field Union Oil Co. completed No. 16 Farwell pumping 171 bbls. of 34.5 gravity oil per day from the Meyer zone at 4,525 feet. Shell also chalked up a new well in this field when No. 27 Slusher was put on the beam pumping 140 bbls. of 34.8 gravity oil per day after the hole had been plugged back from 7,772 feet to 4,560 feet. This well had been suspended for several months before drilling was resumed a short time ago.

Allied Petroleum Corp. finished an exceptionally satisfactory completion in the Long Beach Field early in the week when No. 12 Signal was completed pumping 510 bbls. of 27.7 gravity oil per day from 4,807 feet after the hole had been finished with a 5-inch liner carrying 480 feet of perforated. Richfield Oil Co. spudded in a test on the Hoffman property in the Long Beach Field and the bit at the close of the current week was rotating at 1,515 feet. Selile Oil Corp. has erected a new rig for a well to be drilled at Twenty-eighth and Rose Streets in the Signal Hill Field and rotary drilling equipment should be on ground in a day or two.

Dominguez

Union Oil Co. completed No. 25 Hellman, in the Dominguez Field of Los Angeles Basin, and was rewarded with an 840-bbl. producer from 4,800 feet. The company started rig construction for No. 26 Hellman and should begin making hole within 10 days. Shell is also expected to start drilling operations in another new well as No. 49 Reyes is scheduled for completion within two weeks. Standard Oil Co. is putting the finishing touches on No. 114 Murphy Coyote in the West Coyote Field and should have this potential producer on production within 10 days. Bardeen Petroleum Co. has just spudded in its No. 1 in the East Coyote Field of Los Angeles Basin and while commercial production is anticipated around the 4,000-foot level, the company has made preparations to drill a deep test if necessity demands. Union Oil Co. has abandoned No. 4 Vidor in the Playa Del Rey Field as a duster as the oil sand expected to be encountered above the schist was absent. Ohio Oil Co. recently abandoned No. 13 Recreation at 5,722 feet for a similar reason. Continental Oil Co. has just landed surface pipe in No. 32 Bixby, a new wells in the Seal Beach Field of Los Angeles Basin.

Santa Barbara Mesa

Daniel Fisher completed his first commercial producer in the Santa Barbara Mesa Field early in the week when No. 1 Strahley was brought in on the beam pumping 198 bbls. of 18.1 gravity oil per days from 2,071 feet after the hole had been finished with a 6⅝-inch perforated liner. This well sanded up after completion but is expected to be brought back on production within a few days. Three other wells are scheduled for production tests in the Santa Barbara Mesa Field during the next 10 days as Fred Garliepp's No. 1, R. & M. Oil Co.'s No. 1 and Mann & Gates' No. 2 Knott are all scheduled for early production tests. Julius Dietzmann has reached 2,650 feet in No. 1 Williams, a deep test under way in the Summerland district of Santa Barbara County, but has not yet encountered an oil sand justifying a production test. This well picked up the top of the Sespe at 1,460 feet but so far tests have been negative.

Barnsdall & Rio Grande failed to encounter an extensive thickness of oil sand in No. 8 Doty, a Sespe zone well in the Elwood Field of Santa Barbara County, and operations have accordingly gone ahead. This well showed approximately 25 feet of oil sand in the Sespe a little above the present depth, but did not justify a production test. The potentiality and areal extent of the Sespe formation in the Elwood Field remains more or less conjectural due to the failure of Signal

(Continued on Page 65)

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Company, well and location—	S.T.R.	Depth	Status
Palm Ridge Oil Co., No. 1 Palms, Los Angeles Co.	2- 2-15	7,150	suspended
Clayton, G. L., No. 1 Clearwater, Los Angeles Co.	31- 3-12	1,273	sd. sh. drilling
Pacific Gulf, No. 1 Athens, Los Angeles Co.	19- 3-13	6,034	suspended
Pacific Dev. Co., No. 1 Wilmington, Los Angeles Co.	16- 3-13	3,407	hd. sd. drilling
Sunrise Pet. Co., No. 1 Dominguez, Los Angeles Co.	3- 4-13	5,350	suspended
Kelly & Son, No. 1 Torrance, Los Angeles Co.	7- 4-13	4,176	gr. sd. drilling
Nudson, T. T., No. 1 Inglewood, Los Angeles Co.	17- 2-14	rig	rigged up
Oakes & Mead, No. 1 Lyndwood, Los Angeles Co.	31- 2-12	4,940	suspended
Calito Oil Co., No. 1 Monterey Park, Los Angeles Co.	25- 1-12	5,319	suspended
Community Oil Co., No. 1 Montebello, Los Angeles Co.	34- 1-11	5,281	resume work
Universal Consd., No. 2 Montebello, Los Angeles Co.	5- 2-11	4,493	sd. sh. drilling
Universal Consd., No. 3 Montebello, Los Angeles Co.	5- 2-11	4,480	sd. sh. drilling
Midfield Oil Co., No. 1 Whittier, Los Angeles Co.	19- 2-11	2,016	suspended
Rex Anglin Dev. Co., No. 1 Los Nietos, Los Angeles Co.	29- 2-11	rig	suspended
Signal Pet., No. 1 Puente, Los Angeles Co.	14- 2-10	4,908	pumping test
Recovery Oil Co., No. 1 Sunset Beach, Los Angeles Co.	16- 5-11	3,406	suspended
Superior Oil Co., No. 1 Alamitos, Los Angeles Co.	19- 5-11	mtl.	building rig
Barstow Oil Co., No. 1 Saugus, Los Angeles Co.	35- 5-16	2,136	cemented
Alpha Oil Co., No. 1 Calabasas, Los Angeles Co.	22- 1-18	1,317	suspended
Marbie, Willard, No. 1 Van Nuys, Los Angeles Co.	6- 2-16	2,760	suspended
Black Eagle Oil Co., No. 1 Huntington, Orange Co.	tideland	2,302	sd. sh. drilling
Nuell Co., No. 1 Newport, Orange Co.	29- 6-10	5,090	cemented
Mineral Exploration, No. 1 Capistrano, Orange Co.	8- 8-7	4,302	suspended
Saddleback Oil Co., No. 1 Trabuco, Orange Co.	3- 6-7	80	suspended
Tehama Pet., No. 1 Santa Ana Canyon, Orange Co.	33- 3-8	rig	suspended
Placentia Dev. Co., No. 1 Placentia, Orange Co.	31- 3-9	3,412	reaming
Rubens, Sy., No. 1 Atwood, Orange Co.	19- 3-9	3,162	hd. sd. drilling
Bardeen Pet., No. 1 Coyote.	12- 3-10	rig	rigging up
Bartholomae Oil Co., No. 1 Coyote, Orange Co.	22- 3-10	3,246	cemented
Spindle Top Oil Co., No. 1 Salton Sea, Riverside Co.	25- 7-10	3,590	suspended
Great American Pet., No. 1 Chino, San Bernardino Co.	18- 2-8	2,645	suspended
Great American Pet., No. 2 Chino, San Bernardino Co.	18- 2-8	2,425	br. sh. drilling
McCarthy, C. F., No. 1 Chino, San Bernardino Co.	14- 3-6	803	suspended
Edmonds, E. A., Well No. 1, San Diego Co.	29-15-3	649	suspended

IMPORTANT NORTHERN CALIFORNIA WILDCATS

Company, well and location—	S.T.R.	Depth	Status
General Pet., No. 9 Capitan, Santa Barbara Co.	32- 5-30	rig	suspended
General Pet., No. 7 Capitan, Santa Barbara Co.	32- 5-30	1,463	resume work
Lincoln Drlg. Co., No. 3 Summerland, Santa Barbara Co.	21- 4-26	2,603	suspended
Dietzmann, J., No. 1 Summerland, Santa Barbara Co.	16- 4-26	2,630	rd. sh. drilling
Meganos Oil Co., No. 1 Purisima, Santa Barbara Co.	28- 8-34	3,000	suspended
Barnsdall-Rio Grande, No. 8 Dotay Elwood, S. Barbara Co.	15- 4-29	4,875	rd. sh. drilling
Signal Oil & Gas Co., No. 2 Elwood, Santa Barbara Co.	tideland	5,016	redrilling
Cuyama Oil Co., No. 1 Cuyama, Santa Barbara Co.	12-10-27	3,950	suspended
Indian Pet., No. 1 Shude, Ventura Co.	tideland	4,150	will test
Woodrow Pet., No. 1 Rincon, Ventura Co.	4- 3-24	7,612	suspended
Richfield Oil Co., No. 3 Rincon, Ventura Co.	17- 3-24	2,580	cleaning out
Hancock Oil Co., No. 1 Fillmore, Ventura Co.	13- 4-19	3,280	sd. sh. drilling
Oil Ridge Oil Co., No. 1 Fillmore, Ventura Co.	1- 4-19	360	sd. drilling
Driggs Pet., No. 1 South Mountain, Ventura Co.	17- 3-20	3,280	gr. sd. drilling
Kneiper & Atha, No. 1 Barsdale, Ventura Co.	7- 3-19	1,360	sidetrack fish
Williamson & Donaher, No. 1 Simi, Ventura Co.	36- 3-18	790	suspended
Dabney, H. R., No. 1 Simi, Ventura Co.	22- 2-18	1,091	suspended
C. C. M. O., No. 3-A San Miguelito, Ventura Co.	23- 3-24	4,166	suspended
Midlands Pet., No. 1 Ojai, Ventura Co.	9- 3-23	7,830	suspended
Laing & Jacoba, No. 1 Shields, Ventura Co.	32- 4-19	201	suspended
Wilshire Oil Co., No. 1 Sulphur Mountain, Ventura Co.	20- 4-21	2,198	suspended
Kirk, W. A., No. 1 Sulphur Mountain, Ventura Co.	21- 4-21	1,280	br. sh. drilling
Mosher, J. W., No. 1 Santa Paula, Ventura Co.	22- 4-21	1,770	br. sh. drilling
Las Posas Pet., No. 1 Las Posas, Ventura Co.	22- 3-20	5,500	gr. sd. drilling
International Oil Developers, No. 1 Conejo, Ventura Co.	33- 2-20	2,910	hd. sd. drilling
Hub Pet. Co., No. 1 Gould Hills, Kern Co.	22-29-21	6,840	suspended
Milham Exploration Co., No. 24 Buttonwillow, Kern Co.	6-28-23	2,467	12,000 M gas
Milham Exploration Co., No. 25 Buttonwillow, Kern Co.	8-28-23	mtl.	building rig
Casa Mira Oil Co., No. 1 Belridge, Kern Co.	29-28-20	4,982	suspended
General Pet., No. 1 Belridge, Kern Co.	30-28-21	9,972	cemented
Cumberland Oil Co., No. 2 Devils Den, Kern Co.	17-26-18	3,270	suspended
Lincoln Pet., No. 1 Devils Den, Kern Co.	10-25-18	2,172	abandoned
Hanna, Tom, No. 1 Devils Den, Kern Co.	25-25-18	3,616	suspended
Pyramid Hills Oil Co., No. 1 Devils Den, Kern Co.	24-25-18	4,140	suspended
Fowler, F., No. 1 Blackwell Corner, Kern Co.	15-26-19	3,170	suspended
Associated, No. 1 Lost Hills, Kern Co.	2-26-20	6,640	sd. sh. drilling
Howells Bros., No. 1 Round Mountain, Kern Co.	32-28-29	1,505	cemented
Keno Pet. Co., No. 1 Lerdo, Kern Co.	14-29-27	4,531	suspended
Carribou Record Oil Co., No. 1 Kern Front, Kern Co.	11-28-27	rig	rigged up
Bankline Oil Co., No. 1 Kern Front, Kern Co.	28-28-27	mtl.	building rig
Shafter Oil Co., No. 1 Shafter, Kern Co.	8-28-25	....	material
Ohio Oil Co., No. 1 Buena Vista Lake, Kern Co.	31-31-26	4,000	sd. sh. drilling
Caravel Pet. Co., No. 1 Edison, Kern Co.	19-30-30	1,801	suspended
Union Oil Co., No. 1 Union Avenue, Kern Co.	15-30-28	5,647	cemented
Alta Oil Co., No. 1 Union Avenue, Kern Co.	6-30-28	5,260	sd. sh. drilling
Shell Oil Co., No. 1 Mountain View, Kern Co.	29-30-29	5,910	suspended
Shell Oil Co., No. 2 Mountain View, Kern Co.	29-30-29	5,862	suspended
Hogan Pet. Co., No. 3 Mountain View, Kern Co.	29-30-29	1,297	sd. sh. drilling
Bankline Oil Co., No. 1 Mountain View, Kern Co.	4-31-29	6,088	suspended
Barnsdall Oil Co., No. 1 Mountain View, Kern Co.	31-30-29	6,444	suspended
Labadie, E. L., No. 1 Mountain View, Kern Co.	29-30-29	1,071	sd. sh. drilling
Long Beach Pet., No. 1 Mountain View, Kern Co.	29-30-29	5,906	flow 1,200 B/D
Mohawk Pet., No. 1 Mountain View, Kern Co.	30-30-29	3,491	sd. sh. drilling
Comanche Oil Co., No. 1 Comanche, Kern Co.	15-32-29	1,106	sd. sh. drilling
Badger Oil Co., No. 1 Wheeler Ridge, Kern Co.	31-11-19	4,670	sd. sh. drilling
Gatton & Luethe, No. 1 Madera, Madera Co.	32-10-17	3,020	suspended
Russ Oil Synd., No. 1 Kingsburg, Fresno Co.	20-12-11	3,900	plugging back
Bergman, Harry, No. 1 Kingsburg, Fresno Co.	12-12-11	4,279	cleaning out
Graham & Loftus, No. 1 Raisin City, Fresno Co.	20-15-18	5,906	suspended
Emerich Oil Co., No. 1 Mendota, Fresno Co.	35-12-13	3,820	suspended
Western Gulf, No. 1 S. P., Fresno Co.	3-17-15	7,250	sd. sh. drilling
Roscoe, D. L., Well No. 1, Fresno Co.	36-16-14	rig	suspended
Hogan Pet. Co., No. 1 Joaquin Ridge, Fresno Co.	28-20-16	6,695	suspended
Superior Oil Co., No. 1 Jacalitos, Fresno Co.	6-22-16	7,204	sd. sh. drilling
Kent & McDonald, No. 1 Carrizo Plains, San Luis Obispo.	3-22-22	3,830	suspended
Willet Oil Co., No. 1 Cholame, San Luis Obispo Co.	10-25-15	rig	rigged up
Guess, E. B., No. 1 Corcoran, Kings Co.	7-21-21	6,197	suspended
Brown, A. M., Well No. 3, Kings Co.	10-23-19	1,205	suspended
Knudsen & Schmidt, No. 1 Reef Ridge, Kings Co.	36-23-17	6,873	suspended
Dudley Dome Oil Co., Well No. 2, Kings Co.	9-23-20	370	cemented
Magee & Stone, No. 2 Alpaugh, Kings Co.	32-21-22	3,149	suspended
Douglas, J. M., well No. 1, Monterey Co.	26-22-9	rig	rigging up
Oakdale Oil Co., No. 1 Oakdale, Stanislaus Co.	7- 3-3	3,750	suspended
Na-Pa Oil Co., No. 1 Griffith, Napa Co.	5- 2-10	4,760	hd. sh. drilling
Pacific Northern Oil Co., No. 1 Guinda, Yolo County	23-12-3	5,320	test W.S.O.
Buttes Oilfields Co., No. 1 Marysville, Sutter Co.	35-16-1	2,731	gas—shut in
Buttes Oilfields Co., No. 2 Marysville, Sutter Co.	35-16-1	4,136	sd. sh. drilling
Tehama Pet. Co., well No. 1, Glenn Co.	4-22-5	4,636	redrilling

Nearly 15,000 Bbls. More Added in Michigan; New Producer in Ogemaw County Field

By PAUL A. ELLIOTT
Staff Correspondent, Michigan Fields

MUSKEGON, Mich., Dec. 18.—Nearly 15,000 bbls. of new daily potential oil flow was added to the rapidly mounting total of Michigan fields last week, including a new producer in the Ogemaw County Pool, 60 miles north of the Mount Pleasant area, which came in for an estimate of more than 2,000 bbls. a day in the upper Traverse sands.

The new Ogemaw well is Pure Oil Co.'s No. 1 A. Reinhardt, NW NW NW Section 35-22n-2e, West Branch Township, an east offset to the Weber-Wilcox discovery well. It topped the Traverse limestone at 1,711 feet and at 1,721 feet flowed at the rate of 100 bbls. an hour for three hours. Estimates ranged up to 3,000 bbls. a day.

Pure Oil Co. also drilled its No. 2 J. H. Miller, SE SW NW Section 17-13n-1w, Porter Township, Midland County, into the Dundee for 100 bbls. an hour.

In a new test Pure's No. 2 W. W. Hoyt, brought in about three weeks ago as Michigan's record producer, flowed at the rate of about 25,000 bbls. a day, or 5,000 bbls. more than the previous estimate and 7,000 bbls. a day more than it was rated December 1 for proration purposes. The big well showed a water content of more than 40 per cent when given a new test last Wednesday, however, indicating trouble in the flush Michigan Pool.

McClanahan Oil Co.'s No. 1 A. F. and C. M. Breu, NE SE NE Section 20-13n-1w, Porter Township, also increased 4,500 bbls. a day from an original potential of 500 to 5,000 bbls. when deepened from 3,422 to 3,429 feet.

Theodore Oil Co.'s No. 1 on the Ogemaw Country Club lease, SE SW SE Section 20-22n-2e, a 2½-mile west extension of the Ogemaw County Pool in West Branch Township brought in a week ago, was increased from an initial of about 40 bbls. to 275 bbls. a day by acid treatment.

Three new Porter Township wells, in addition to Pure's No. 1 Miller, added an aggregate initial of about 950 bbls. in the Dundee last week: McClanahan Oil Co.'s No. 1 Howard S. Northrup, NE NE SW Section 20, a 500-bbl. well extended the pool southwest, although it showed a marked drop-off in structure with the Dundee, topped at 3,417 feet and a total depth of 3,459 feet; Edward Stewart's No. 4 Henry Carter, SW NW NE Section 21, with the Dundee was topped at 3,362 feet, estimated initial 150 bbls. a day, and C. W. Teater's No. 1 Joseph Wale, SE NE NW Section 22, estimated 300 bbls.

Mammoth Petroleum Co.'s No. 4 A. and A. Thayer, SE NW NW Section 23-16n-4w, was the only new Vernon Township completion in the Dundee. It flowed over the top of the derrick when it came in unexpectedly. The drill hit the pay at 3,659 feet, 80 feet higher than on a south offset and 20 feet higher than in any other well in the Vernon Township Pool. It had an initial of about 45 bbls. an hour.

W. J. Sovereign's No. 1 well on the Ann Arbor Railroad right of way, in Section 22, Vernon Township, was increased from an initial of about 70 bbls. to 400 bbls. by deepening.

Nearing Completion

Two wells drilling into the Dundee pay sands in Porter Township as the week closed were Stork Oil Co.'s No. 3 C. E. Baxter, SW NW NE Section 22, and George Hanner's No. 1 George Hathaway, SE NE NE Section 17. M. D. and R. A. Wells' No. 1 William G. Williams, NE NE NW Section 27, was still shut down on top of the Dundee. O. H. O'Neal's No. 1 Caywood, in Section 6, Porter Township, a wildcat southeast of the Yost Pool and northeast of the Porter Pool, was about ready to drill into the Dundee. Two other Midland County wildcats were drilling, S. S. Bankle's No. 1 Farnsworth in Section 15, Jasper Township, and McClanahan Oil Co.'s No. 1 Brooks, Section 11, Mount Haley Township. Ide Oil & Gas Co.'s No. 1 E. Willey, SW NW NW Section 22-16n-4w, Vernon Township, will be deepened as production has fallen off sharply from an initial of 450 bbls.

Wittmer Oil Co.'s No. 1 McReavy, in Section 12-15n-4w, Isabella Township, about half way between the Vernon and Leaton Pools, and W. J. Bernier's No. 1 Flood, in Section 9, Vernon Township, near the northern edge of Isabella County, reached the Traverse. Same company's No. 1 Duncan, also in Section 9, is down about 600 feet. L. G. Thompson's No. 1 Callihan, in Section 20, Vernon Township, a possible west extension, is drilling at about 700 feet, while three other Vernon and Wise Township outposts are under way: National Petroleum Corp.'s No. 1 Wild, Section 21, Vernon; V. M. Voorhees' No. 1 Smith, Section 30, Wise Township, and Dokenva Gas Corp.'s No. 1 James Walsh, Section 15, Vernon Township.

Burland and Travis' No. 1 C. E. Macomber, NW NE NW Section 19-14n-2w, Greendale Township, Midland County, was reported to have made an unknown amount of oil from the Dundee before it was shut down. Carl Adams' No. 1 John Bolen, SW SW NE Section 14, Greendale, was ready to rerun 5-inch casing and drill into the Dundee.

A. R. Nelson's No. 1 Victor Nelson, NE NE SE Section 33-22n-2e, West Branch Township, Ogemaw County, cased at 1,728 feet was ready to drill into the upper Traverse. Thompson Brothers' No. 1 Grover Zettle, NE NE SW Section 13-22n-1e, Ogemaw Township, was drilling at about 1,500 feet, while Ira Schiefley's No. 1 William Gray, SE SE SE Section 23-22n-1e, unsuccessful in the Traverse, was drilling at 2,800 feet as a Dundee test. Dr. C. L. Hess' No. 1 J. W. Richards, SE SW SW Section 27-22n-2e, West Branch Township, was rigging up.

A seven-days flow of the Daily Crude Oil Co.'s No. 1 H. P. Christensen, drilled in a week ago as the discovery well of a prospective new Central Michigan field, aggregated 700 bbls., or 100 bbls. a day from the upper Traverse. Traverse limestone was topped at 3,015 feet and the well drilled to 3,085 feet, about 10 feet in the pay. The oil tested 44 gravity, or 3 degrees higher than the

(Continued on Page 65)

Indiana and Central Ohio Gain in Completions; Four Reported in Kentucky Fields, Two Dry

By GEORGE A. WHITNEY
Staff Correspondent, Central West Fields

FINDLAY, Ohio, Dec. 18.—The Central West Field is holding its own, regardless of the weather that made it hazardous at the drilling wells. Indiana and Central Ohio both are showing more completions than for some time. In the Lima Field of northwestern Ohio, three completions were reported in Wyandot County. In Crane Township, Crane Township Oil & Gas Co.'s test on the Francis Huffman farm, Section 27, produced an initial of 75 bbls. from the Trenton lime from 1,345-77 feet. Pitt Oil & Gas Co.'s test on the A. E. Myers farm, Section 3, same township, came in a gas well in the Trenton from 1,342-1,410 feet. McPherson and others are starting a test on the Catherine Smalley farm, same section. In Pitt Township, same county, Newcomer and others' test on the W. H. Castenein farm, Section 11, struck salt water at 1,475-1,575 feet, and goes as a dry hole. Cessna and Teasel have a rig on the Thomas Bowman farm, Section 15, same township. Jones and Coyle are drilling on the Edith A. Swerline farm, Section 21, Tymochtee Township, same county.

Bosse Brothers are down around 1,325 feet on the M. and H. Bosse farm, Section 18, Van Buren Township, Hancock County.

J. H. Murphy & Sons are drilling No. 1 on the Andrew Kimmitt farm, Section 20, Liberty Township, Seneca County. R. E. Greene is drilling No. 3 on the T. C. and B. G. Shaull farm, Section 30, same township.

CENTRAL OHIO

The Central Ohio Field reported 14 completions, 4 oil wells with an initial of 120 bbls., 3 dry holes and 7 gas wells. In Vinton County, Kachelmacher estate drilled a dry hole on the Eggleston farm, Section 36, Brown Township, near Plymouth, in the Berea sand at 176 feet. Powers and others are drilling No. 9 on the Cameron S. Clark farm, Section 4, Knox Township, below 850 feet.

In Medina County, Clyde Daugherty has made a location for No. 2 on the C. and F. Daugherty farm, Section 2, Montville Township.

In Lorain County, Wittmer Oil & Gas Co.'s test on the William Webber farm, Lot 83, Grafton Township, showed an initial of 52 bbls. at 2,587 feet. Same company's No. 1 on the George Myers farm, in Lot 86, same township, was a dry hole at 2,696 feet. Ohio Fuel Gas Co. is drilling No. 1 on the Elmer Alexander farm, Lot 86, Eaton Township, and has a rig in for No. 2 on the same farm. National Tube Co. is drilling on fee property, Lot 66, Sheffield Township, same county. Ohio Fuel Gas Co. has a location on the Charles H. Opfer farm, Lot 4, Lagrange Township, same county.

In Wayne County, Ohio Fuel Gas Co.'s No. 1 on the Jennie DeMay farm, Section 13, Congress Township, is a gas well.

In Summitt County, East Ohio Gas Co. has a rig in for No. 1 on the Ross Lamb farm, Section 17, Green Township.

In Knox County, Upham Co. has a rig on the James Metzger farm, Lot 13, Monroe Township. In Jackson Township, same county, Pure Oil Co. made a location for No. 3 on the Parker Mavis farm, Section 1, and Preston Oil Co. has a rig for No. 2 on the A. J. Beatty farm, same section.

In Coshocton County, Preston Oil Co.'s No. 2-1,526, on the William Frazee farm, Newcastle Township, produced an initial of 55 bbls., and has a rig in for No. 2 on the R. L. Cochran farm, same township, and also a rig for No. 3 on the William Frazee farm, same township. Same company is drilling No. 2 on the A. Van Winkle farm, Section 2, Perry Township, same county. Pure Oil Co.'s test on the Arthur C. Epply farm, Section 5, Clark Township, same county, is a gas well from 3,432-90 feet. Leonard Oil Co. is drilling No. 4 Isaac Norris farm, Section 12, Pike Township, same county. J. E. Ringler is drilling on the W. O. Hartman farm, Section 27, Fitchville Township, Huron County.

In Licking County, Emerald Petroleum Co.'s No. 2, on the Calvin Mossholder farm, Section 14, Fallsburg Township, produced 10 bbls. initial. Ohio Fuel Gas Co. is drilling on the Russell Jones farm, Section 12, Mary Ann Township.

In Athens County, Ohio Fuel Gas Co.'s No. 1 A. C. Creamer farm, in fractional Section 30, is a gas well.

In Tuscarawas County, Hopewell Oil & Gas Co.'s No. 3, on the George W. Asher farm, Lot 30, Washington Township, produced 3 bbls. at 3,469 feet.

In Stark County, East Ohio Gas Co.'s No. 1, on the Alfred E. Hockwalt farm, Section 17, Plain Township, is a gas well from 4,507-27 feet. Same company is drilling No. 1 on the Frank A. Goldsmith farm, Section 14, same township. Peiffer and others' No. 1 J. H. Schneider farm, Section 17, same township, is a gas well. Harry Hoover's No. 1 on his own farm, Section 21, same township, is a gas well at from 4,544-68 feet. Brendel Producing Co.'s No. 1 C. L. Wood farm, Section 9, same township, is a gas well from 4,474-4,505 feet. Same company has a rig for No. 1 on Bell Terre allotment, Section 10, same township. In Jackson Township, same county, Ohio Fuel Gas Co. is drilling No. 1 on the Charles N. Horning farm, Section 10, and has a rig for No. 2 on the Therman Bechtel farm, Section 8, same township.

In Belmont County, R. W. Dunn &

Co. struck a dry hole in No. 2 on the Thomas Tenley farm, Section 22, Union Township, at 929 feet.

In Guernsey County, Jewell & Muhlback are drilling on the Thomas Stewart farm, Section 21, Willis Township, and Ohio Fuel Gas Co. has a location for No. 1 on the John Johnson farm, Section 20, same township.

In Athens County, C. W. Nuzum is drilling No. 1 A. I. Vernon farm, Section 13, Berne Township.

In Muskingum County, Sutton & Stansberry are drilling No. 2 Ella Fountain farm, Section 23, Brush Creek Township. Lupher & Kline are drilling No. 1 on the Clark Landis farm, Section 22, same township.

INDIANA

Thirteen completions were reported from the Indiana fields, which shows improvement, five being oil producers with an initial production of 140 bbls., two gas wells and six dry holes.

In Gibson County, G. B. Shoulty's test on the James Armstrong heirs' farm in Donation 8, Washington Township, is a gas well and Big Four Oil & Gas Co. is drilling No. 3 Lottie Hope farm, Section 18, same township.

In Pike County, H. N. Bell is drilling No. 2 Thomas Stone farm, Section 20, Washington Township. Claude E. Noble and others are drilling No. 3 Helen Smith farm, Section 18, same township.

In Warrick County, Pennsylvania-Indiana Oil Co. is drilling on the Ora Smith farm, Section 15, Anderson Township.

In Perry County, Anderson Creek Oil & Gas Co.'s Nos. 6, 7 and 8, NE Section 30, Clark Township, produced initially 30, 40 and 30 bbls. Bankable Oil Co. and Smith's No. 1, on the Joe Minier farm, Section 29, same township, is a gas well at 710 feet. In Oil Township, same county, Bankable Oil Co. is drilling No. 1 John Flamion farm, SE Section 22.

In St. Joe County, Shrock and others lost the drilling tools at 2,600 feet on the Sones farm, Section 29, Harris Township, and abandoned the hole, and have started drilling No. 2 on the same farm.

In Martin County, Sproul and others' No. 4, on the John Larkins farm, Section 19, Perry Township, was dry at 508 feet, and No. 5, same farm, is drilling.

In Kosciusko County, Van Buren Oil Co.'s test, on the W. O. Wehrling farm, NE Section 10, Van Buren Township, struck water at 65 feet in the Trenton and was dry.

In Henry County, Knightstown Natural Gas Co.'s No. 3, on the John Chew farm, Section 25, Wayne Township, is a gas well.

In Shelby County, J. Harve Snider's No. 1, on the Snider farm, in Van Buren Township, is dry.

In Vanderburg County, John L. Drake and others' No. 3, on the Evansville Gun Club grounds, NW Section 33, Center Township, was dry at 1,073 feet. Perry Tichenour's No. 1 Oscar Euler farm, Section 29, same township, produced 10 bbls. initial. Foreman & Miller's No. 2 Helen Murphy farm, Section 20, same township, produced an initial of 20 bbls., as did No. 3 on the same farm. Same company is drilling No. 2 on the Katherine Builtman farm, Section 20, same township. Vanderburg Oil Corp. is drilling No. 6 on the George Hornby farm, Section 32, same township. Drake, Moffett & Young are drilling Nos. 7 and 8 on the J. M. Effinger No. 1 farm, NW Section 33, Center Township, same county. McClurkin and others are drilling No. 1 on the W. P. Woods farm, SE Section 16, Scott Township, same county, and Douglas and others are drilling No. 1 on the O. Reminga farm, Section 7, same township. John L. Drake and others are drilling No. 1 on the E. Grim farm, Section 2, German Township, same county.

In Hendricks County, Clayton Oil Co. is drilling on the G. T. Underwood farm, Section 28, Liberty Township, and in Knox County, Thayer & Lloyd are drilling on the Burton Yates farm, Section 16, Busseron Township.

In Shelby County, Addison Township, Frank Rhodes is drilling on the Rhodes farm, Section 11, Addison Township, and north of Peacock village.

KENTUCKY

Only four wells were reported from the Kentucky fields. The best completion was in Ohio County, Stewart Weir and others' No. 5 E. C. Dunn farm, with an initial of 100 bbls., in the Jett sand at 370 feet. M. A. and Grace Carpenter's No. 6, on the Ida Kelley 218 acres, same county, produced 2 bbls. at 380 feet, while Snowden-McSweeney Co.'s No. 3, on the E. C. Hartford farm, was dry at 385 feet.

Imperial Oil & Gas Products Co.'s test, on the W. Basket farm, in the Niagara Pool, in Henderson County, was dry.

Total runs made from wells served by the Illinois Pipe Line Co. in western Kentucky during November were 120,003.00 bbls.

Fair Producer and More Drilling in Lost Run Pool, Ritchie County, W. Va.

By STAFF CORRESPONDENT

PITTSBURGH, Pa., Dec. 18.—C. F. Vincent and others completed a fair producer in their No. 3 on the John T. and Ella B. Fox farm, mapped as the Biddie Fox farm in Lost Run Pool, Clay district, Ritchie County, West Virginia. It began flowing at the rate of 125 bbls. a day from the Injun sand at a depth of 1,805 feet.

Drilling in this pool at the present time are the following wells: R. E. Bills and others have reached 1,365 feet on the Vincent heirs farm, offsetting the Edgar Hinton farm; T. J. Davis and others are down 1,235 feet on the William Kibbie farm about 1,000 feet east of production; G. B. Hendershot and C. B. Smith are drilling at 997 feet in No. 3 on the Charles H. Frederick farm; Richards Farm Oil Co. is on top of the Injun sand streak in No. 3 on the Corlie Ball farm.

In Cambria County, Pennsylvania, the test of the White Mill Oil & Gas Co. on the Adams estate along Route 422, between Belsano and Strongstown, has reached a depth of 4,505 feet and shut down. At that depth drilling was exceedingly slow due to a very hard formation. Heavier equipment is now being installed and drilling will be resumed which is expected to carry this test below 5,000 feet.

Completions in the eastern fields numbered 16 wells and 2 dry holes. Of these, eight were producers with an initial production of 184 bbls. a day, and the remainder gas wells. Southeast Ohio continues fairly active.

WEST VIRGINIA

One additional small producer, four gas wells, and two dry holes were completed in West Virginia during the week. The producer was No. 1 on the Daniel P. Eddy farm which was drilled deeper by the Welch Farm Oil Co. to the Squaw sand at a depth of 1,985 feet. It is showing for about a 1-bbl. pumper. This farm is in Murphy district, Ritchie County.

In the gas pool in Guyandotte district, Cabell County, Lusher Brothers completed a test on the Fessenmyer Brewery property in the Shale at a depth of 2,725 feet and have a fair gas well. The gauge showed over 700,000 feet a day.

In Gilmer County, Clem S. Morris and others completed their No. 3 on the Cora B. Gainer farm in DeKalb district in the Injun sand at 2,177 feet. It is showing for about 200,000 feet a day.

In Ritchie County Big Four Drilling Co. completed a fair test in No. 1 on the D. C. Newbrough farm in Grant district. It was drilled down to the Squaw sand, 1,908 feet and is estimated at 800,000 feet a day with about 10 bbls. of oil. Production comes from both the Squaw and Maxon sands. In Murphy district, W. H. Bickle completed a test on the John H. Hyman farm in the Injun sand at 1,919 feet and has a small gas well gauging about 100,000 feet a day. On Wolf Pen Run in Grant district, C. F. Egan and others drilled a test on the Scadden heirs farm through the Injun sand to a depth of 2,100 feet. It proved dry in all formations.

In Tyler County, Ohio Oil & Gas Co. drilled a test on the Emerson Hill farm in Meade district through the Injun sand to a depth of 1,910 feet. It was dry and is being abandoned.

Drilling in West Virginia

Activity in Kanawha County is improving. On the waters of Indian Creek in Elk district, Valley Gas Co. is building a rig on the G. W. Harless farm. On Arbuckle Branch in Big Sandy district, South Penn Oil Co. shot and cleaned out No. 1 on the Parish Perdue farm in the Squaw sand and it is now showing for about three-quarters of a barrel a day. In Poca district, Columbian Carbon Co. has started drilling on the Webb Hunt farm. Owens Bottle Co. has the rig and part of the tools ready for No. 11 on the C. Q. Crockett farm.

In Cabell County, Guyandotte district, another test has started. R. H. Adkins and others have started drilling on the Oland G. Charles property. In this district, H. H. Baker Gas Co. is down 2,583 feet on the Wolf and Oppenheim lease. C. C. Wolfe and others are drilling at 1,900 feet on the S. E. Vickers lot. Martin and Swanson are shut down for casing at 1,940 feet on the Humphrey farm. Black and Sansom have started drilling on the F. H. Holswade lease. In McComas district, West Virginia Gas Corp. is about due in with a test on the Millie Ferguson farm, the depth being 3,486 feet.

In Lincoln County, United Fuel Gas Co. has reached 2,100 feet in No. 4,383 on the Jennie Burton farm in Union district. In Putnam County, J. V. Reichman has started drilling deeper his No. 1 on the Edward Findley farm in Scott district and is down 1,600 feet.

In Boone County, Pure Oil Co. has five wells drilling. In Sherman district, this company has three wells drilling on the Federal Coal Co. tract. Its test on the A. M. Prichard farm in this district is nearing 4,000 feet, and on the Williams Coal Co. lease the depth is now 2,279 feet. In Nichols County, the test of Godfrey L. Cabot is drilling at 2,360 feet. This farm is in Jefferson district.

In Roane County, Frank Finley has reached 1,140 feet on the W. Hunt Smith farm in Geary district. In Curtis district Henderson Oil Co. has started drilling a second test on the F. L. Ball farm. In Smithfield district, Ohio Valley Gas Co. is fishing for the tools on the Josephine Young farm at 1,665 feet.

Calhoun County

In Calhoun County, a new test starting is in Sherman district where R. Fowler and others have spudded in No. 1 on the Lafayette Stump farm. In this district, W. H. Bickel is building a rig on the Luverna Barr farm and Jess Mason and others have reached 1,831 feet on the J. K. Ferguson farm. In Center district, Fisher and Smith are down 986 feet in No. 2 on the C. A. and M. S. Snyder farm. In Washington district, Everett Starcher has reached 900 feet on the Anderson Cottrell farm. In Lee district, F. F. McIntosh has his second test on the Mary E. Hays farm drilling at 1,390 feet.

In Gilmer County, South Penn Oil Co. is shut down testing the stray sand below the Injun sand in drilling deeper No. 1 on the Flora S. Bennett farm. The sand is making about 15 bbls. a day. In the same district, Center, McCall Drilling Co. is down 2,100 feet on the J. M. Taggart farm. Chartiers Oil Co. has reached 1,700 feet in No. 11 on the Baptist Home Missionary farm and shut down cementing a cave. This is an old well being drilled deeper to the Berea sand. In DeKalb district, A. E. Ellis and others are rigging up for No. 4 on the Webster and Ware lease.

In Doddridge County, Clifton Oil & Gas Co. is drilling on the F. V. Williams farm in Grant district at 1,700 feet. In Marshall County, the second test of Guy B. and A. B. Patterson on the G. and A. B. Williams farm in Liberty district has reached 2,930 feet.

In Ritchie County, Griffin Producing Co. has made a location on the C. B. McVay farm in Grant district. In this district, Lucas and Mahaney have started drilling a second test on the Van Martin farm. In Murphy district, Dr. S. M. Prunty has started drilling on the M. L. Bollinger farm. In this district, Clem S. Morris has completed a rig on the F. B. Strother farm. Four Point Gas Co. has a location on the J. T. Johnson farm in the same district.

SOUTHEAST OHIO

Seven wells were completed in Southeast Ohio during the week, of which five were producers with an initial production of 48 bbls. In Belmont County, Richland Developing Association completed a second test on the John R. Lochary farm in the northeast quarter of Section 25, Richland Township, in the Berea sand at a depth of 2,060 feet. It was shot and is showing for about 10 bbls. a day and will probably produce in excess of that amount while the hole is being swabbed. This may revive interest in this township as several fair producers were completed in this section last year by Union Gasoline & Oil Co.

In Coshocton County, Pure Oil Co. complete a fair test in Clarke Township, Lot 5, on the A. C. Eppley heirs farm in the Clinton sand at a depth of 3,502 feet. After shot it is showing for about 750,000 feet a day with a showing of oil estimated at 2 or 3 bbls. a day.

In Lorain County, Wittmer Oil & Gas Properties completed a test on the Phillip Webber farm, Lot 83, Grafton Township, in the Clinton sand at 2,633 feet. It produced 50 bbls. the first 72 hours. This well is about 1 mile northwest of production on the A. L. Jenkins farm, Lot 28, Litchfield Township, Medina County. There were only 8 feet of pay sand and it was shot with 30 quarts.

In Medina County, three wells were completed. In Section 1, Litchfield Township, D. A. Lake completed No. 11 on the Pearl and Frank Weaver farm, in the Berea grit at 303 feet. It produced 10 bbls. the first day after shot.

In Chatham Township, Tract 6, Lot 22, Curtis and Eaken completed No. 11 on the Thomas Brown, Jr., farm in the Berea grit at 400 feet. It made 5 bbls. the first day after shot. In this township, but in Tract 15, Lot 2, E. R. Edson & Son Co. completed No. 38 on the Ed G. Miller farm. It was drilled in the Berea grit at 475 feet and produced 3 bbls. the first day after shot.

In Washington County, J. T. Campbell and others completed a test on the James King heirs farm in Section 8, Lawrence Township. It went to the second Cow Run sand at 1,236 feet and is showing for about 130,000 feet of gas and after shot 2 bbls. of oil a day. It is about 1,300 feet southeast of production on the Eliza King farm.

SOUTHWEST PENNSYLVANIA

Four wells were completed in Southwest Pennsylvania during the week, two of which were fair gas wells. There was but one producer. In South Franklin

(Continued on Page 65)

New Operations in the Rocky Mountain District; Jal Pool Well Plugged Back Fails to Improve

By TOLBERT R. INGRAM
Staff Correspondent, Rocky Mountain Area

DENVER, Colo., Dec. 18.—Humble Oil & Refining Co.'s No. 3-A Lindley, in the Jal Pool in New Mexico, which was making 6,000 bbls. of sulphur water at 3,510 feet, failed to improve upon being plugged back. There were no completions or new locations.

One new operation was reported in Colorado, a shallow test on the North McCallum Dome in Jackson County. A wildcat in Grand County, 12 miles north of Kremmling, was reported to have a show of gas at 600 feet. No completions were reported.

The Mutual Oil Syndicate completed a 1,000,000-foot gas well in its No. 9-X, on the Dutton Creek structure, Carbon County, Wyoming, and its deep test had 1,000 feet of oil in the hole from the Muddy at 4,873 feet. A new test is being started in the Goshen Hole district in Goshen County, 18 miles south of Lingle. Two new locations were reported in the Osage Field and one in Crook County.

In Montana, one completion, which swabbed 90 bbls. initial, one dry hole and one new location were reported in the Cut Bank Field. A test on the Birney Dome is being drilled by the Birney Gas & Oil Co.

NEW MEXICO

Lea County

The potential for the Hobbs Pool as of December 1 was placed at 1,269,324 bbls. daily, an increase of 2,715 bbls. over the November 1 figure. Allowable outlet for the first half of December is 33,472 bbls. daily, practically the same as in the preceding period. Pipe line runs from the field for November were 1,008,860 bbls., bringing total since proration went into effect up to 38,954,162 bbls.

Humble Oil & Refining Co.'s No. 3-A Lindley, C NW SW Section 13-25-36, Jal area, which was making 6,000 bbls. per day of sulphur water at a total depth of 3,510 feet, was plugged back to 3,470 feet with 35 sacks, and then plugged back to 3,410 feet with 24 sacks without improving conditions. After plugging back it continued to make 5,000 to 6,000 bbls. of water per day with only a trace of oil.

Western-Anton's No. 1 Conditt, C SW SW Section 12-25-36, which has been blowing wild through split casing, is preparing to swedge the pipe at 850 feet. It is planned to run a smaller string inside of the 6-inch and cement all the way to the top.

Southern Petroleum Exploration Co.'s No. 1 Ascarate, C NE NW Section 24-25-36, cemented the 12½-inch on bottom at 461 feet with 400 sacks and is standing.

Texas Co.'s No. 4-A State, C Lot 7, Section 2-21-23, Lea area, is drilling a water well.

San Juan County

Western Drilling Co.'s No. 2-A Green, C SW NE Section 29-17-29, Jackson area, had a small show of oil at 2,785-98 feet and is shut down at 2,840 feet in sand, preparing to place a small shot. Other wells on the Ramage tract have been turned into producers with a shot after having only a small show. Stovall & Marshall's No. 1 Mock, C SE SE Section 29-24-27, Black River district, is drilling in gray sand at 2,338 feet and had a small show of oil at 2,335-38 feet. Warren L. Todd's No. 1 Levers, C SE SE Section 25-26-29, South Eddy area, is drilling at 2,100 feet.

Flynn, Welch & Yates' No. 67 State, C SW NW Section 10-19-28, Artesia area, is drilling at 915 feet, and the Pecos Valley Gas Co.'s No. 8 Vandagriff, NE Section 5-17-28, is drilling at 450 feet. R. D. Compton's No. 6 State, SW NE SW Section 15-16-23, upper Cottonwood district, is underreaming the 8¼-inch at a total depth of 630 feet. Ralph Spearow and others' No. 1 McClelland, SW NW NE Section 22-22-23, Indian Creek, is drilling at 4,470 feet in black lime, and the Pecos Valley Drilling Co.'s No. 1 McIntyre, NW NW Section 27-23-25, Dark Canon district, is drilling at 1,500 feet.

San Miguel County

Cabra Springs Oil & Gas Co.'s No. 1, C NE NE Section 22-12-22, Pine Mesa district, is drilling at 1,600 feet after landing the 10-inch at 1,480 feet.

Bernalillo County

Norins Realty Co., Inc.'s No. 1 Gallegas grant, C NW NW Section 19-11-4e, northeast of Albuquerque, for which a location was made more than a year ago and which a few months ago was reported rigged and ready to spud, is now said to be only a location with no rig on the ground. Same firm's No. 2 Pajarito grant, NW cor. NE Section 29-9n-1e, is shut down at 386 feet.

San Juan County

McCoy & Phillips' No. 1 Martin, NE SE NW Section 34-30-11w, Aztec district, cased off water at 957 feet and has resumed drilling. At 985 feet it had a show of gas which gauged 235,000 feet in 24 hours. Fred Barrett's No. 1 Hart, SW NW SW Section 11-29-11, has landed the 5⅞-inch on bottom at 1,440 feet. Meier & Culberson's No. 1 Lemley, C NE Section 32-30-11, had a small show of gas at 700 feet, total depth, and landed the 6⅝-inch at 675 feet.

COLORADO

Jackson County

C. Leonard Smith and others' No. 1 North Park Coal Co., approximately in the NW NW Section 18-9-78, North McCallum Dome, is rigging up for a shallow well to a horizon at 600 feet in which some production has been found. If the well comes in as a producer it is planned to drill seven other shallow wells and with the proceeds drill a deep test to the Muddy. The location is about 1½ miles southeast of Continental Oil Co.'s No. 1 Sherman, which came in in 1926 in the Muddy sand at 5,110 feet making 54 gravity crude oil with a big flow of carbon dioxide gas which gave it the name of the "ice cream" well. Smith and associates control the Colorado Oil Refining Co., which has a refinery in North Denver. This tract is one of the very few tracts of patented land on the structure.

Grand County

Interstate Oil & Refining Co. is reported to have had a show of gas at around 600 feet on the Kremmling, or Dirt Creek structure, about 12 miles north of the town of Kremmling. The gas is said to have burned to a height of 10 feet above the casinghead. The strike has not been confirmed. The location is approximately in the SE NW Section 11-2n-81. This company was incorporated in Colorado last October for 25,000 shares of stock of no par value by Dr. S. H. Bassow, a Denver physician; Samuel T. Silverstein and Louis G. Isaacson. Another company in which some of the same interests were stockholders, the Oil and Mineral Lands, Inc., drilled its No. 1 McElroy, SE SW Section 14-2n-81, two years ago, encountered water in the Dakota at 545 feet and abandoned it at 613 feet. This test was found to be off structure and rig was moved to the new location farther north.

Moffat County

Texas Co.'s No. 5 Parkinson, NW SW Section 23-4n-92, Iles Dome, spudded December 13 and is drilling at 82 feet. The Stanolind Oil & Gas Co.'s No. 21-X, NE SW NW Section 23-4n-92, is building rotary rig. Contract has been let to the Noble Drilling Co. The Rocky Mountain Drilling Co., a subsidiary, will, however, be in charge of the drilling and will furnish equipment from a well it recently completed in the Hiawatha Field.

Rocky Mountain Gas Co.'s No. 2 Bogenchultz, SE cor. Section 9-6n-91, Craig Dome, is drilling at 2,580 feet. The objective gas sand is expected at 2,800 feet.

Montezuma County

McElmo Oil Co.'s No. 1 West, NE NW NE Section 31-36-17, McElmo district, shut off water with the 8¼-inch at 1,350 feet and is drilling at 1,400 feet.

Las Animas County

Mountain States Oil Corp.'s No. 1 Nikola, C NE SE Section 10-34-62, Garcia district, is shut down for new cable at 915 feet.

Park County

South Park Oil Co.'s No. 1 Milligan, NE cor. SE Section 13-8s-76, Jefferson district, is drilling at 3,142 feet in hard rock after cutting 5 feet of white lime.

Arapahoe County

MacDeb Drilling Co.'s No. 1 Fitzsimmons, NE Section 7-4s-66, near Aurora, which has made no new hole below 6,128 feet for many months, is gradually recovering a string of 3,200 feet of 4¾-inch pipe which dropped into the hole. About 1,000 feet remains to be fished out. Just before the accident occurred the bailer showed about 50 feet of oil standing in the hole.

Larimer County

Colorado Producers, Inc.'s No. 1 Foster-Motz Reservoir, SW SE SE Section 17-4n-69, Berthoud district, is drilling at 1,500 feet.

WYOMING

Carbon County

Mutual Oil Syndicate's No. 9-X, E NW NE Section 12-18-78, Dutton Creek, was completed as a gas well in the Shannon sand at 1,920 feet, total depth, with an initial production of 1,000,000 feet per day. It has been connected with the pipe line to Laramie. Same company's No. 9 Dutton Creek, E NW NE Section 12-18-78, a deep test, is bottomed at 4,873 feet after cutting 25 feet of Muddy sand. It was given a small shot and oil rose 1,000 feet in 24 hours. It is swabbing and testing and preparing to run tubing. The syndicate has two small producers in the Muddy a little to the north of this location.

Earl W. Reeder, Inc.'s No. 1 Union Pacific, C SW SW Section 19-20-83, Overland Dome, reran the 6⅝-inch to 2,900 feet and is trying to lower it to bottom at 3,735 feet, but is handicapped by ground that is caving badly. This well showed for about 25 bbls. per day in the Mowry shale, which is a favorable indication for production in the Dakota series at around 4,000 feet. The structure is 8 miles long and 2½ miles wide and has a minimum closure of 2,500 feet. While the identity of the interests back of this operation has not been publicly stated, it is reported that the General Petroleum Corp., of California, is identified with it in some manner and there are rumors, unconfirmed, that should the well open a new light oil field the Standard Oil Co. of New York might become a bidder for the Producers & Refiners Corp.'s refinery at Parco, which is to go on the auction block next March. The test is 19 miles from the Parco refinery.

Ohio Oil Co.'s No. 1 A. J. Hazlett, NE NW Section 34-23-79, Allen Lake, topped the Sundance at 2,030 feet and went out of it at 2,280 feet. The formation was found a little higher than in No. 2 Hazlett, on the same quarter, which was completed in the Sundance for 17,000,000 feet of gas. No. 1, which is being drilled with a rotary, is headed for the Tensleep. If the sands in the Pennsylvanian do not produce oil, the well will be plugged back and completed as a gasser in the Sundance.

Producers & Refiners Corp.'s No. 4 Wertz, SW cor. SE Section 7-26-89, Wertz Dome, is redrilling at 2,800 feet. Old bottom is at 3,541 feet.

Goshen County

A new test is being started in the Goshen Hole district, 18 miles south of Lingle, in Joyce Hardy and others' No. 1 Charles H. Peterson, SW cor. Section 21-22-63. Standard rig with 122-foot derrick, and camp, are being constructed. It will be drilled with cable tools and may go to 6,000 to 7,000 feet. Frank F. Carpenter, of Denver, has the contract. The block of 40,000 acres was assembled by Hiram D. Lingle for the Goshen Petroleum Co., of Torrington, which turned the acreage to Mrs. Hardy under a drilling contract.

Weston County

Two locations in the Osage Field were reported in Wyoming Gas & Oil Co.'s No. 1 Government, SW NW NE Section 23-46-64, and in Hugh Updike & Son's No. 3, NW SW SE Section 23-46-64. Weston Oil Trust's No. 3, NW SE NW Section 23-46-64, is drilling at 1,225 feet.

Crook County

An operation not heretofore reported is Sundance Syndicate's No. 1, NW NE Section 12-49-66, Elmore district, which is shut down at 735 feet. Baker Exploration Co.'s No. 1, NE NW Section 20-49-66, Kara district, is drilling in the Muddy at 2,150 feet with a hole full of water.

Big Horn County

Taylor Oil Co.'s No. 1 Island, Lot 5, Section 25-56-97, Byron district, is drilling at 2,100 feet.

Niobrara County

Interstate Oil & Refining Co.'s No. 1 Morrell, NW NE SE Section 2-39-61, West Mule Creek, cemented the 6⅝-inch at 2,268 feet (cor.) where it killed a show for 1,500,000 feet of gas per day, and is drilling ahead at 2,280 feet, close to the objective Minnelusa.

Natrona County

Midway Oil Corp.'s No. 1 Boyer, SW NE NE Section 23-35-79, Midway Dome,

recovered lost drill stem and is waiting at 4,680 feet, total depth, for casing.

Park County

Resolute Oil Co.'s No. 1 State, C NW SW Section 16-57-101, Badger Basin, is shut down for the winter at 3,608 feet (cor.) after cementing the 9⅝-inch on bottom. V. M. Kirk's No. 1 Government, SW cor. Section 24-58-98, Frannie Dome, which was completed two weeks ago with an estimated production of 500 bbls. per day, swabbed at the rate of 1,000 bbls. per day on a test. The oil is 28 degrees gravity on the A.P.I. scale. The Embar at 2,654-89 feet did not amount to much and the oil is coming from the Tensleep, topped at 2,706 feet. Total depth is 2,741 feet.

Hot Springs County

Empire State Oil Co.'s No. 4 Republic, NE cor. NW Section 14-44-98, Hamilton Dome, is running the 7-inch to bottom at 2,785 feet and will test the Tensleep. It topped the Embar at 2,752 feet in which it had water.

Sublet County

Cretaceous Oil Co.'s No. 1 Government, E NW NE Section 12-28-114, Dry Piney, suspended at 895 feet and equipment has been moved away. It had water in a sand at 680-700 feet.

Stanolind Oil & Gas Co.'s pipe line from the La Barge Field to Opal shut down for the winter on December 1. The company has 60,000 bbls. in storage at Opal which will be shipped to the Utah Oil Refining Co. at Salt Lake City for winter runs as needed.

MONTANA

Glacier County

Lom Crumley's No. 1 Weaver, Lot 7, Section 27-35-6w, in the Blackfeet Indian Reservation, Cut Bank Field, swabbed 90 bbls. at 2,932 feet, total depth, and probably will settle to around 50 bbls. It topped the lower Darling at 2,865 feet and went into the Ellis at 2,929 feet.

R. C. Tarrant's No. 2 Miller, C SW NE Section 24-34-6w, a location at which production might be expected, found only 8 feet of poor sand and looks like a dry hole. Total depth is 2,872 feet. It will be allowed to stand to see if conditions improve.

One new location was reported in Santa Rita Oil & Gas Co.'s No. 1 Billedeaux, 660 feet north and 440 feet west of the SE cor. Lot 8, Section 27-35-6w.

Routine drilling operations are as follows: Alberta-Pacific Consolidated Oil Co.'s No. 3 Keisel, NW cor. Section 11-34-6w, is shut down for rotary at 143 feet, and its No. 3 Matson, SW NW SW Section 14-34-6w, is drilling at 925 feet. A. B. Cobb's No. 2 Walburger, C NW SE Section 35-35-6w, is rigging up, and the Commonwealth Petroleum Co.'s No. 1 Getty, C NE SW Section 15-34-6w, is drilling at 2,876 feet. Dunstall and others' No. 1 Kennerly, C NE NW Section 22-34-6w, is rigged and ready to spud. R. C. Jeffries and others' No. 1 Clark, C SW SW Section 3-34-6w, is shut down to complete rigging after spudding.

Montana Headlight Oil Co.'s No. 2 Williams, C NE NE Section 11-34-6w, is spudding at 375 feet, and Montana Power Gas Co.'s No. 1 Seeba, NE cor. NW Section 2-34-6w, is fishing at 2,775 feet with two strings of tools in the hole. Nadeau Brothers' No. 1 Van De Mar, C SE NW Section 35-35-6w, is drilling at 1,435 feet, and Olive Oil Co.'s No. 1 Winkler, C NW NW Section 35-35-6w, is fishing for bit at 345 feet. Par Oil Co.'s No. 2 Haines, SE cor. SW Section 2-34-6w, is fishing for pipe at 2,810 feet.

Santa Rita Oil & Gas Co.'s No. 2 Cardwell, C Lot 4, Section 15-35-6w, is bottomed at 165 feet and straightening crooked hole at 145 feet. Its No. 3 Tribal, C NW NW Section 15-35-6w, cemented the 12½-inch at 556 feet with 50 sacks, and its No. 3 Yunck, C SE SW Section 14-34-6w, is drilling at 326 feet after landing the 12½-inch on the bottom.

R. C. Tarrant's No. 2 Britton, SW NW SE Section 14-34-6w, cemented the 6¼-inch at 2,890 feet with 10 sacks and is waiting at a total depth of 2,917 feet. His No. 3 Britton, C NE SW Section 12-34-6w, is waiting for crew, and his No. 2 Haglund, Sr., C NW NW Section 13-34-6w, is drilling at 2,035 feet. Tarrant's No. 4 Haglund, Jr., C SE SE Section 13-34-6w, is running the 6⅝-inch at a total depth of 2,755 feet, and his No. 1 Winkler, C SW SW Section 23-34-6w, is fishing for bailer at 2,530 feet.

Texas Co.'s No. 1 Haggerty, SE cor. Section 9-34-6w, is shut down at 2,222 feet on account of storm, and its No. 1 Purdy, SE cor. SW Section 35-35-6w, is drilling at 700 feet. Same company's No. 1 Yunck, NW SW Section 14-35-6w, is standing at 160 feet after completing rotary rig, and its No. 1 State, C NE Section 16-32-5w, South Cut Bank, is drilling at 2,610 feet.

Fergus County

S. W. Pennock and others' No. 1 Nordheim, Section 6-21-18, Scharf district, is drilling at 300 feet.

Hill County

Independent Natural Gas Co.'s No. 1, NE SE Section 9-32-17, Box Elder district, is drilling at 378 feet.

Liberty County

Harold Hayes and others' No. 1 Strode, NW SW Section 3-36-4e, Sweetgrass Hills, is drilling below 300 feet. It had water at 95 feet, and a show of gas at 165 feet. The 10-inch was set at 200 feet. This is said to be the highest point, geologically, in the Sweetgrass Hills.

Petroleum County

Guy Smith and others' No. 1-A, SE cor. Section 3-13-26, Flatwillow district, is drilling at 500 feet in a 12½-inch hole after skidding rig from No. 1, which was lost at 1,235 feet. Winnett-Pacific Oil Co.'s No. 1, NE SE Section 23-14n-28, Flatwillow district, which has been shut down at 1,460 feet for several years, resumed on November 17, found the old hole had filled to 1,250 feet, and is redrilling at 1,300 feet.

Rosebud County

A new operation is the Birney Gas & Oil Co.'s No. 1, SW cor. Section 7-6s-43, Birney district, which is drilling at 100 feet.

Toole County

Alberta Development Co.'s No. 3 Buckley, NE SE SW Section 1-37-4w, cemented the 6⅝-inch at 2,298 feet, tested a show of oil and gas in the Sunburst at 2,310-32 feet, and is drilling at 2,332 feet. C. Leonard Smith and others' No. 1 Mowat, SW cor. SE Section 7-33-2e, East Selby district, is testing a show of oil and gas at 1,355-80 feet. McClure and others' No. 1, SW NW NE Section 4-35-1w, Kevin-Sunburst Field, set the 6⅝-inch at 1,510 feet, had a show for 3 bbls. per day after a shot, and is drilling at 1,602 feet.

SOUTH DAKOTA

Lakota Development Co.'s No. 1 Knude, SE SE Section 20-10s-4e, Shiloh district, Fall River County, has cleaned out to bottom at 3,030 feet, and is preparing to run the 4½-inch to shut off water.

South Turner Valley Has One of Largest Wet Gas Flows Encountered in Area

By VICTOR LAURISTON
Staff Correspondent, Canadian Fields

CHATHAM, Ontario, Dec. 16.—In the South Turner Valley, Sterling Royalties' No. 1, LSD 1, Section 33-18-2w5, has come into production with one of the largest wet gas flows yet encountered in the Turner Valley Field. Initial crude naphtha production on one separator is reported at 350 bbls. a day, with strong probabilities that additional separator equipment will materially increase this. The test started making hole on July 11, drilling time being only 125 days and total elapsed time 4 months and 23 days. This constitutes a new speed record for deep drilling in the Turner Valley, the previous record of approximately 6½ months being held by Sterling Pacific Oil Co.'s No. 2. Hilary Head, for many years chief rotary driller for Royalite Oil Co., had charge of the operations.

The test was drilled on acreage leased originally from Calgary & Edmonton Corp. by Sterling Pacific Oil Co. Location is midway between Sterling Pacific Oil Co.'s No. 2, and Merland Oil Co.'s No. 1, both large producers.

Sterling Royalties' No. 1 got the Madison at 4,970 feet and finished at 5,657 feet, or 687 feet in the lime. The 8⅝-inch casing was cemented in the top of the lime at 5,001 feet. When the hole was bailed down about 1,120 feet, fluid started to rise and within a few hours the hole cleared itself. The government test next morning showed a flow of 35,000,000 feet of wet gas with rock pressure of 2,000 pounds. With a second separator installed and the well operating to capacity, a crude naphtha recovery between 450 and 500 bbls. a day is estimated. Deliveries are already being made to Imperial Oil Refineries, Ltd., at Calgary. Robert Wilkinson, of Calgary, is president and managing director.

In Section 28-18-2w5, W. Fay Becker Syndicate's No. 2 Anaconda, LSD 15, is reported making production test at 5,350 feet. It is about 300 yards south and a little west of Sterling Royalties' No. 1 producer. At the present depth it is 270 feet in the Madison and has a wet gas production from several horizons, with apparently a fair commercial crude naphtha recovery. It will be drilled deeper into the lime.

Mar Jon Section

Completion of Sterling Royalties' No. 1 has stimulated interest in the Mar Jon section, Section 28-18-2w5. The first production in this section was secured last spring when Mar Jon-Freehold's No. 1, in LSD 9, was brought into large production. Sterling Royalties' No. 1, though in Section 33-18-2w5, is very close to the northern boundary of Section 28, and close to some tests now drilling; while immediately east of the northeasterly corner of Section 28, is Merland Oil Co.'s No. 1 producer in Section 27.

Section 28 represents the farthest south point in the Turner Valley Field where the Benton shale formation outcrops. South and west of this outcrop, which covers the northeastern corner of Section 28, the Benton is overlain by the Belly River, involving deeper drilling to reach the lime horizons.

LSD 16, in the extreme NE cor. Section 28, is held by Director Oils, Ltd., which recently located a test south and a little east of Sterling Royalties' No. 1. On LSD 15, immediately west, Becker Syndicate's No. 2 Anaconda is in the lime and testing production. In LSD 14, west of the Anaconda well, Century Royalties, Ltd., has a lease on the north half. Work has already been started on this test, which will be drilled with rotary tools. Robert Wilkinson is president and managing director of the Century company. The southeast quarter of the same LSD is the location of Sunburst-Mid Royal's No. 1, which at last reports was standing at 1,630 feet. The southwest quarter of LSD 14 and all LSD 13 (on which no test is yet located) are held by R. W. Brown, who also holds the northwest quarter of LSD 12, immediately south of LSD 13. The Century and Sunburst-Mid Royal tests are just west of the line between the Belly River and Benton outcrops.

The Sunburst-Mid Royal interests hold the southwest quarter and east half of LSD 12 and all LSD 11. Immediately east, in LSD 10, on acreage originally held by a Kindersley, Saskatchewan, syndicate, Mar Jon Oil Co.'s No. 2 is drilling with rotary tools below 4,580 feet. This test, which is inside the Benton shale area, is expected to get the lime very soon. Immediately east of this is LSD 9, on the southeast quarter of which Mar Jon-Freehold's No. 1 producer was drilled earlier in the year.

LSD 8, immediately south of this, is held by Publix Oil & Gas Co. under a sublease from Merland Oil Co. Publix's No. 1 in this LSD, and inside the Benton shale outcrop area, has recently finished straightening and is making new hole below 1,270 feet. This test is offset, to the east, by C. and E. Longview's No. 1, in Section 27-18-2w5, which is being drilled by Imperial Oil, Ltd. Immediately west of the Publix holdings, Pacalta Oils, Ltd., holds all LSD 7, with a test, just inside the Benton shale outcrop, running 10-inch casing preparatory to resuming at 3,120 feet. Work was held up for some weeks by a fire. Immediately west is LSD 8, in the Belly River outcrop area; this LSD is held by British Dominion Oil & Development Corp. which located a test some months ago but has done no work. LSD 5, still farther west, is held by Richfield Petroleums, Ltd.

South of this, LSD 4 is under lease to Model Oils, Ltd., which so far has made no arrangements for development. LSD 3, to the east, is held by W. Fay Becker and associates of Calgary, who some time ago arranged with a Vancouver syndicate, headed by Harry G. Morris and Stewart Goodfellow, for a test. No work has yet been reported. The north half of LSD 2 and all LSD 1, is held by Anaconda Oil Co. Spooner Oils, Ltd., is drilling its No. 1 test on this acreage in LSD 1, and is reported preparing to resume after running 13⅜-inch casing to 2,558 feet. This test got a small gas show at 2,210 feet and encountered the cardium marker at 2,200 feet. Drilling here started in the Belly River formation. The south half of LSD 2 is held by the Lovett interests.

While most of the really active drilling is in the northeastern portion of the section, where the Benton shale outcrops, considerable interest attaches to the possibilities of the larger area in the southwest portion overlain by the Belly River formation. The resulting extra thickness will presumably involve deeper drilling, but it is to the west of the field that tests drilled farther north have encountered crude oil instead of crude naphtha in the lime. The farthest west location in this area is one tentatively made by Richfield Petroleums, Ltd., in LSD 5; but no early work is anticipated.

Imperial's No. 1 C and E. Longview, LSD 5, Section 27-18-2w5, is reported drilling below 2,058 feet.

Far South Tests

In the far south end, Highwood-Sarcee Oils' No. 1, NE Section 21-18-2w5, is down more than 3,000 feet and preparing to run 13⅜-inch casing. Union Drilling Co.'s No. 1, LSD 8, same section, is reported resuming around 2,755 feet after a delay to drill a water well.

In the Mercury tract, Associated Royalties' No. 1 Spray is reported drilling in a very hard formation below 3,250 feet.

Central Turner Valley

In the Central Turner Valley, Okalta

Oils' No. 4, LSD 8, Section 1-20-3w5, is around 2,800 feet and experiencing considerable difficulty straightening hole. Midfield Oil Co.'s No. 1, LSD 9, same section, has deepened from 4,248 feet, increasing the wet gas flow from an original initial production of 9,350,000 feet to 9,900,000 feet a day. Production showed considerable falling off recently.

November Deliveries

Deliveries from the Turner Valley Field to the Imperial and Bell refineries in November totaled 72,456 bbls., compared with 79,272 bbls. in October, a decrease of 6,816 bbls. Deliveries to the Imperial refinery included 11,453 bbls. of clear naphtha, 50,326 bbls. of discolored naphtha, and 5,753 bbls. of light crude oil, compared with October deliveries of 11,914 bbls. of clear naphtha, 53,000 bbls. of discolored naphtha and 6,076 bbls. of light crude. Deliveries to the Bell refinery in November were 4,924 bbls., against 8,192 bbls. in October.

Tests in the Foothills

In the forest reserve area west of Olds, Hunter Valley Oil Co.'s No. 1 MacLaren, Township 31-10w5, is at 2,430 feet, drilling and underreaming and carrying casing down behind the tools.

In the Moose Mountain area, west of Calgary, Elbow Oils' No. 1, LSD 11, Section 35-22-5w5, is running casing below 3,400 feet, preparatory to resuming at 3,645 feet. The outfit will run three tours. East of this, F. D. Lundy Syndicate's No. 1, on the Birch Ridge structure in Section 6-22-4w5, is reported preparing to start.

On the Pekisko structure, south of Turner Valley, Pekisko Hills Co.'s No. 1, LSD 6, Section 6-17-2w5, is rigging up. Dr. Robin Willis is in charge and test is expected to spud in this month.

Oil City Test

In the old Oil City Field, southwestern Alberta, Oil City Royalties' No. 1 Patrick, Section 30-1-30w4, is drilling in a hard fine limestone below 1,500 feet. The test is making 10-inch hole, with 12-inch casing run to 903 feet, work being in charge of Andy Rutherford and Carl Klench. Some oil shows were met in the upper formations.

Border Fields

On the Alberta end of the international Reserve Dome structure, Rialto Oils' No. 1, LSD 4, Section 5-1-9w4, is reported standing at 2,550 feet, awaiting government test of a second cementing job.

On the Twin River structure south of Lethbridge, Nordon-Roney's No. 2 Twin River, LSD 11, Section 2-2-20w4, is reported taking crude production from the top of the Madison at 3,930 feet pending arrival of acid for a second treatment of the lime formation.

Duvernay Test

On the Duvernay structure north of Edmonton, Frontier Development Co.'s No. 1 Brosseau, LSD 8, Section 36-55-12w4, is reported rebuilding derrick. The 13-inch surface casing was cemented at 100 feet.

Wainwright Field

In the Wainwright Field, East Central Alberta, Maple Leaf Oil & Gas Co.'s No. 2, LSD 1, Section 24-45-8w4, has been shot to increase gas production from the upper sand. The company supplies gas to the Wainwright Gas Co. for distribution in the town of Wainwright.

Blood Reserve Project

Commercial development of the Blood Reserve structure in southern Alberta, near Lethbridge, is forecast by the incorporation under Dominion charter of Blood Indian Oils, Ltd., with office at Lethbridge, Alberta. The structure was blanketed some years ago by Commonwealth Petroleums, Ltd., of Calgary, which later drilled a series of 12 structure tests in Townships 7, 8 and 9, Ranges 22 and 23w4. None of these tests was carried below 1,000 feet. Recently it was reported Commonwealth Petroleums, Ltd., which has been active in the Cut Bank Field, was arranging with other interests for development of its Blood Reserve acreage.

Inland Petroleum Meeting

Shareholders of Inland Petroleum, Ltd., held their annual meeting recently at Coleman, Alberta, when the following directors were re-elected: A. M. Morrison, Coleman; George Fisher, Natal, British Columbia; W. K. Stewart and M. Cox, Fernie, British Columbia; F. M. Thompson, Blairmore; G. E. Cruikshank, Hillcrest. Arthur M. Densmore, of Lundbreck, Alberta, is secretary-treasurer and general manager.

British Columbia Operations

Shareholders of the Okanagan Oil & Gas Co. held their annual meeting recently at Kelowna, British Columbia. A new board of directors was elected, including J. E. Reekie, A. V. Surtees, E. G. McKenzie, G. H. Herbert, and G. A. Carter. E. G. McKenzie was continued as managing director. The company's No. 1 test, in the E half Section 2-26-Osoyoos Survey, is standing unfinished at 2,740 feet.

Saskatchewan Test

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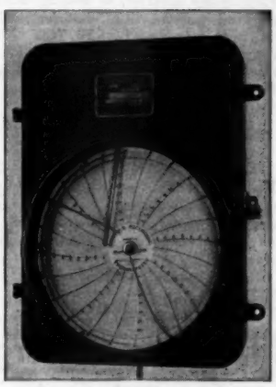

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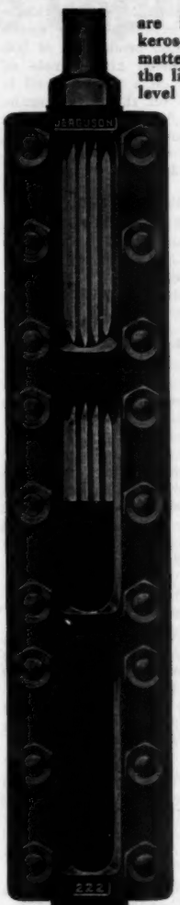

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Dirt Hills structure, Pine Hills Petroleums' No. 1, LSD 8, Section 23-12-24w2, has been shut down for the winter. The hole bottoms at 2,938 feet and fair gas flows have been met at several horizons. The company is a subsidiary of Highwood-Sarcee Oils, Ltd., of Calgary.

Ontario Drilling

In the Dawn Field, Lambton County, Ontario, Union Gas Co.'s No. 18, Lot 24, Concession 8, Dawn Township, has completed deepening to 1,987 feet without securing any increase in gas production. Union's No. 4 is deepening below 1,750 feet. Union Gas Co.'s No. 70, Lot 24, Concession 1, is drilling around 1,000 feet.

Farther north, British Petroleum Co.'s No. 1 Lot 22, Concession 9, Plympton Township, near Aberarder, is reported shut down for repairs to drilling rig, after encountering a fair oil show in the top of the big lime.

In Elgin County, Union Gas Co.'s No. 1 Aldborough, Lot D, Concession 10, Aldborough Township, is reported drilling below 1,250 feet, after casing to 1,100 feet.

Kent County Tests

In Dover Township, Kent County, Ajax Oil & Gas Co.'s No. 6, Antaya farm, SE Lot 1, Concession 4, Dover East, is drilling below 1,960 feet. Prairie Oil & Gas Co.'s No. 2 Stephens farm, Lot 2, Front Concession, is down more than 1,000 feet and running casing.

In Raleigh Township, Southern Ontario Gas Co.'s test, in SW Lot 3, Concession 12, is reported standing with the hole practically full of oil, pending instructions as to completion. Farther east, Olga Oil & Gas Co. is taking oil production from its gassers in the central section of the same township. The Flook well is reported making 3½ bbls. a day and that on the Pete Doyle farm between 4 and 5 bbls. Two other wells are reported giving a small production.

Manitoba Test

David Wright and James Stevens of Sarnia are reported moving a drilling outfit from Saskatchewan to southwestern Manitoba where they will drill a test for the Lisgar Oil & Gas Co. south of Manitou.

Alberta Pipe Line Tax

Alberta oil operators, and particularly those in the Turner Valley Field, have been seriously concerned with the enforcement of the Pipe Line Taxation Act, passed at the last session of the Alberta Legislature. While the act contemplated merely the taxation of oil and gas pipe lines, in the tentative assessments recently issued by the Alberta Assessment Commission, it was interpreted as taxing also the casing in the wells, on the ground this was part of the pipe used in the transmission of the product. It is claimed that small producing wells were subjected to a prohibitive tax, and a case is cited of one well with an average production of 8 to 10 bbls. a day being assessed at $130,000. Objections were made by representatives of the operating companies with the result that the entire question is being reviewed by the Alberta Assessment Commission, which made public the following statement:

"The attention of the Alberta Assessment Commission has been called to a statement appearing in the press with respect to assessments under the Pipe Line Taxation Act of pipe lines and casings belonging to the various oil companies in the Turner Valley Field. A limited number of tentative assessments were made, and subsequent meetings were held in Calgary with the specific purpose of discussing the question at issue with the companies concerned. A careful note was then made of the objections raised and assurance given that the matter of valuation would be reviewed. Since that meeting the chairman has been in southern Alberta hearing various appeals from assessments and has not yet returned. Owing to this fact the representations made by the various companies at the Calgary meetings have not yet been reviewed. It is, therefore, entirely premature for any of the companies to assume that no change in valuation will result from the meetings then held."

A statement by Premier J. E. Brownlee points out that the Pipe Line Taxation Act transferred from the municipalities to the province the right of taxing pipe lines, and thus protected the companies from arbitrary municipal taxation. The assessments made by the commission were merely tentative and did not represent government policy and the entire matter was still open to representation and discussion.

Kansas Fields

(Continued from Page 41)

sand at 1,886-1,910 feet with a small showing of oil and a hole full of water from Mississippi lime at 2,000-10 feet. C. E. Johnson's No. 1-A Berridge, NE NW SW Section 10-22-13, was dry and abandoned at 1,537 feet.

New work in Greenwood County included the following: Ward McGinnis and others' No. 1-A Prather, NE NW SE Section 15-24-11, is a machine; Wolf Creek Oil Co.'s No. 1 Stecket, NW SW NE Section 12-25-12, spudding; Markus & Gore's No. 4 Smith, NE NE SW NE Section 6-24-12, drilling at 1,400 feet. Matthews & Rex's No. 1 C. Lewis, SW SE SE Section 8-24-12, drilling at 1,300 feet; Hinze and others' No. 2 Vannocker, NE SW NE Section 12-23-14 (Woodson County), fishing; Skelly Oil Co. and Tidal Oil Co.'s No. 26 Wick, NE NW SW Section 27-22-11, spudding.

Rice County

E. F. Jones and others' No. 1 Santa Fe, Chase townsite, Rice County, SE NE SE Section 31-19-9w, was completed. It made 775 bbls. in a potential test of 24 hours from Siliceous lime at 3,225-35 feet. Ramsey and others completed No. 1 Lansing, SE cor. NE Section 31-19-9w. It made 645 bbls. of oil and 105 bbls. of water in 24 hours in a potential test from Siliceous lime at 3,222 feet, total depth 3,271 feet.

Empire Oil & Refining Co. has made location for No. 2 Heckel, NW NE SW Section 18-20-9w, and for No. 3 Heckel, NE NW SW Section 18-20-9w. Atlantic Oil Producing Co. made a location for No. 1 Schmidt, C E half NE SE Section 11-19-10w. National Refining Co. has rig on the ground for No. 2 Sherman, NE SE SW Section 16-19-9w. Ramsey and others were spudding No. 1 McCarland, SW NE SE Section 31-19-9w.

Miscellaneous Operations

Stanolind Oil & Gas Co. has a rig up for No. 1 Gerlof, C NW NW Section 16-20-11w, Barton County.

Skelton's No. 1 Ott, C SE SE Section 16-19-14w, Barton County, was given a 1,000-gallon acid treatment above 3,255 feet and had 2,000 feet of fluid in the hole. It had been drilled into granite topped at 3,659 feet, total depth 3,706 feet and plugged back to 3,255 feet.

Hartman Oil Co. and others' No. 1 Orth, SW cor. NW Section 15-16-10w, Rice County, was drilling at 820 feet.

Tom Palmer's No. 1 Setinle, NW cor. SW Section 22-13-14w, Russell County, was drilling at 290 feet.

Beardmore, Palmer and the Gypsy Oil Co.'s No. 2 P. Wieland, NE SE SE Section 36-12-16w, Ellis County, was acidized at 2,996-3,014 feet and pumped 100 bbls. in 12 hours.

SEES 1934 BETTER

NEW YORK, Dec. 18.—Myron C. Taylor, chairman of the board of the United States Steel Corp., says that conditions now are "better in every way" than they were a year ago.

"We are not going out of this old year in sackcloth and ashes," he said. "We are going out with renewed confidence, faith and assurance that 1934 is going to be a better year for all of us."

OIL WAREHOUSE FIRE

TORONTO, Ontario, Dec. 16.—Fire on December 12 destroyed the storage warehouse of Visco Petroleum Products, Ltd., at 3466 Dundas Street, West. C. H. Innes and Louis Miller, workmen, were burned to death.

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NATURAL GAS DEVELOPMENTS

Illinois Coal Operators Challenge Gas Companies

CHICAGO, Dec. 18.—Investigation by the Illinois Commerce Commission into charges of price discrimination, unlawfully acting as guarantee of a contract between the Chicago District Pipe Line Co. and the Natural Gas Pipe Line Co. of America, and the selling of gas below cost to industries and other heretofore large users of coal, is demanded in a complaint filed with the commission by the Illinois Coal Operators Association against the Peoples Gas Light & Coke Co.

Benjamin F. Lindheimer, chairman of the commission, announced a hearing will be held January 10. It will mark the beginning of a bitter fight between the Illinois Coal Operators Association and the gas company. The coal industry has been preparing for the matter for many months.

While the complaint is based on discrimination in prices and other charges the economic picture brought on by the closing down of mines and the unemployment situation brought about, it is charged, by the substitution of natural gas for coal, will figure in the proceedings. The complaint says:

"Your petitioner is informed that the Peoples Gas Light & Coke Co., in connection with the Public Service Co. of Northern Illinois, and the Western United Gas & Electric Co., is by contract, directly and indirectly guaranteeing the performance of a contract entered into between the Chicago District Pipe Line Co. and Natural Gas Pipe Line Co. of America, contrary to law.

"The Peoples Gas Light & Coke Co. has entered into some character of contract with Swift & Co. whereby it furnishes gas to Swift & Co. on a so-called interruptible basis at 12½ cents per 1,000,000 B.t.u.'s, which is approximately 12½ cents per 1,000 feet, and in connection with said contract has constructed at a cost of $159,000 a standby plant for the use of oil or other liquid fuel at the cost of said Peoples Gas Light & Coke Co., and has entered into some character of a guarantee with Swift & Co. with respect to prices and heat during the use of said oil standby plant, which contract and guarantee is illegal."

The complaint is signed by W. J. Jenkins, president, Illinois Coal Operators Association, and A. B. Steffens, chairman of a committee appointed by the organization, but as gas users.

The gas company challenges the right of the commission to conduct such an investigation as demanded. Counsel for the coal operators, backed by the United Mine Workers of America, insists that not only has the commission the legal right, but that under the law it is mandatory.

EDMONTON RATES APPROVED

EDMONTON, Alberta, Dec. 16.—The Alberta Board of Public Utilities Commissioners has formally approved a revised schedule of natural gas rates proposed by Northwestern Utilities, Ltd., for the city of Edmonton. The new rates are retroactive to October 28 and will continue to April 26, 1934. The schedule is optional and any consumer may continue under the old rates; nor is any consumer required to pay at a rate higher than the existing maximum rate.

The new schedule is: For the first 1,000 feet, $1.90 per 1,000; for the next 1,000 feet, $1; for the next 58,000 feet, 30 cents; next 940,000 feet, 25 cents; next 500,000 feet, 23 cents, and next 1,500,000 feet, 18 cents per 1,000.

Problems of Changing From Artificial to Mixed Gases and Their Solutions

By C. E. NORDSTROM
Sioux City Gas & Electric Co.*

Numerous papers have been presented by persons closely connected with the actual changeover from manufactured to natural gas, or mixed gases, throughout this country during the last few years. Many of those in attendance here have discovered, or determined in advance, many extremely vexing problems which do doubt have been satisfactorily solved in each case. It is earnestly hoped that the discussion which follows will bring out many of these solved problems.

It is the intention of this paper to bring out the problems encountered in Sioux City, and their solution when natural gas was substituted for gas oil in the manufacture of gas; then give a partial summary of information contained in papers and reports of problems encountered, and their solution, in changeovers from manufactured gas to mixed gas and from manufactured gas to natural gas.

Upon considering the use of natural gas for enrichment purposes it was decided to set up a small appliance testing laboratory in which we assembled various appliances, used in our locality for test. We happened to have a miniature water seal gas holder on our property which we used to mix gas for experimental purposes. It was determined from our experiments that it would be practical to distribute a gas consisting of approximately 64 per cent blue gas and 36 per cent natural gas. We are now distributing 40 per cent natural and 60 per cent blue gas. This mixed gas was tried in many appliances and was found to burn satisfactorily without any major appliance adjustment except in dental torches and Den-Pro ovens.

Shortly after this mixture was reached we began to receive complaints from dentists and dental laboratories that their torches would not burn properly and that they had trouble in melting gold for castings. Upon receiving these calls the customer was provided with a dental torch, to replace his torch, at no cost. In numerous cases it was necessary to demonstrate that these new torches were capable of filling their specific needs. We had complaints from dental laboratories that the ovens in which they prepared their casting molds were not burning properly. These complaints were taken care of by replacing existing burners with conversion burners. The dental torch replacements were spread over a period of approximately six months.

Inspecting Equipment

Our fitters were instructed to inspect the adjustment of all gas-burning equipment, in customers' premises, and regulate them if necessary in their regular routine of work. It was apparent from the number of orders received on Rutz pilot light outages, which we determined was due to the slower flame propagation of our mixed gas, that we would have to reduce the flow of gas to the pilot port. This was accomplished by using the Rutz lighter valve conversion nipple, and these were used only when it was necessary to satisfy chronic complaints. This is a resume of the problems that we encountered in using natural gas for enrichment purposes.

*Before Mid-West Gas School and conference, Iowa State College, Ames, Iowa.

In changing from a 550 B.t.u. manufactured gas to approximately 800 B.t.u. mixed gas the number of problems will be considerably increased because of changes in the calorific value, specific gravity and flame propagation. Due to the calorific change it is necessary to decrease the size of the orifice which may be done on adjustable orifices by the "screw back" method or by the conversion method. On all fixed orifices it will be necessary to use the conversion method. A change in the constituents of the gas usually necessitates the introduction of more primary air for complete combustion. The induction of this primary air, being dependent upon the specific gravity, will call for adjustments in the primary air mixers. With increased methane in this mixed gas the ignition velocity of the flame will be decreased. This requires in special cases the enlargement of burner ports or the addition of flame retention nozzles. In as much as these are the primary factors to be considered in the changing over of all gas burning equipment it will be interesting to note some of the actual mechanics of this work.

Adapting Appliances

In the majority of cases range top burners, hot plates and side arm water heaters are not difficult to adapt. However, in the cases of automatic gas appliances such as automatic water heaters, heatrolas, bake ovens and boilers on which the inputs are not fixed it is necessary to cut and try orifice sizes until the correct B.t.u. input is obtained. On radiant fire burners of the bar type with fixed gas orifice and fixed primary air it will be necessary to change these for saxaphone burners having adjustable primary air and gas orifice. When burners under steam tables and coffee urns are encountered that do not have adjustable orifices and air shutters it is advisable to change to a burner having these facilities. Some of the conditions that will bear watching in range oven conversions are secondary air openings clogged with scale and rust, warped linings, and clogged flue passages. In some cases it will be necessary or economical to replace equipment such as bunsen burners and small laboratory burners of the fixed orifice type. Major appliances such as house heating equipment, industrial equipment, and gas refrigerators will need separate and specialized adjustments which will have to be determined by local conditions as to the type and make of equipment in use. It seems to be generally accepted that the conversion manual and material that can be obtained from Denver will enable a company to make a changeover with a minimum amount of difficulty. In general it is extremely essential to build up and train an organization of skilled workmen and supervisors for the successful changeover of gas burning equipment from manufactured to mixed or natural gas.

The adaptation of gas burning equipment from 800 B.t.u. mixed gas to a natural gas of approximately 1,000 B.t.u. will give us similar problems to solve as in the change from artificial gas to the 800 B.t.u. gas.

St. Louis Mayor Asks City to Buy Laclede Co.

ST. LOUIS, Mo., Dec. 18.—A survey which may lead to the acquisition by the city of St. Louis of the Laclede Gas Light Co., a subsidiary of Utilities Power & Light Corp., is proposed by Mayor Dickman in a message to the St. Louis board of aldermen. He announced that he would seek sanction from the Civil Works Administration for the allocation of funds to determine by a survey the possibilities of obtaining natural gas for the city.

The mayor said in part: "A careful estimate based on full information of the cost to the city of setting up its distributing system, and in connection, an analysis of the distributing system of the present gas company (Laclede Gas Light Co.) should be made so the city may determine whether it is advisable to acquire that system, by purchase or condemnation if necessary, in order to operate a gas system in the most economical manner possible.

Project to Supply Gas to Five Michigan Towns

MUSKEGON, Mich., Dec. 18.—The Community Natural Gas Co. of Mount Pleasant last week presented an application for a Federal PWA loan of about $485,000 to aid in laying a pipe line from central Michigan gas fields to Alma, Breckenridge, St. Louis, Shepherd and Ithaca, five cities and villages near the Mount Pleasant oil and gas area. James P. McCloskey and Lee S. Miller, now of Detroit but formerly natural gas engineers in Tulsa, are interested in the project. They have been granted franchises to operate in all of these communities except Ithaca, Gratiot County seat, where final action has not yet been taken.

It is planned to obtain gas from wells in the Vernon and Clare County gas pools. The proposal was submitted to the Michigan State advisory board several weeks ago and was referred to the regional board in Detroit last week. The Michigan Federated Utilities Corp. is now supplying these towns with artificial gas.

Bow Island Gas Storage Being Continued Steadily

LETHBRIDGE, Alberta, Dec. 16.—Storage of waste gas from the Turner Valley in the exhausted sands of the Bow Island Field, some 160 miles distant, is being continued steadily with the compressor pumps operating 24 hours a day. The repressuring plant of the Canadian Western Natural Gas, Light, Heat & Power Co. at Bow Island, constructed at a cost of around $150,000, has now been in operation for more than three years and repressuring may be continued for a similar period before the work is completed.

R. S. Winter, field superintendent of the company, recently furnished some data on the plant and its operations. The repressuring plant, receiving gas from the Turner Valley Field and storing it in the natural reservoir at Bow Island, has now stored over 5,000,000,000 feet in the old wells since it started operations on August 4, 1930. The plant is shut down for 14 days every year in order to equalize pressure in the different wells of the field.

On August 4, 1933, three years after the plant was started, the pressure in the wells was 426 pounds. When storage was started the pressure was 248 pounds, considerably below a working pressure.

Originally, when the field was first opened in 1912, pressure was 810 pounds.

TECHNICAL QUESTIONS ANSWERED

By Charles K. Francis, Ph. D., Technical Editor

This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible.

Inquiries must be signed but only the given initials will be printed. The source of the questions is considered to be confidential.

Questions requiring a discussion of patents, the use of intricate formulas, extended computations, or cost estimates cannot be considered.

When the matter is of general interest the reply will be published within a reasonable time.

Considerations Relating to Corrosion in Oil Industry

I will appreciate very much an outline of all types of corrosion met with in the petroleum industry, including the acids formed in all types of distillation and the theoretical considerations under which each is formed. I would like also a list of metals impervious to each type of corrosion and their physical characteristics, such as tensile strength, weight, etc. What is the approximate price of each metal?—W. H.

All types of corrosion are met with in the petroleum industry. These include numerous conditions, as where the metal is in contact with the ground, water, waste materials, and as the oil may pass through the several stages in the refinery. Just what causes extensive corrosion to iron pipe, tank bottoms, etc., when in contact, or covered, with earth is not always clear. Several reasons have been suggested, including the acid theory, according to which the first step in corrosion must require the presence and action of some acid, the most abundant being carbonic. Another idea is that it is due to the formation of hydrogen peroxide, and possibly other peroxides. This may be true with some metals, such as silver, zinc, tin and copper, but is not well supported for iron. A related theory explains corrosion as being due to direct attack by oxygen.

The generally accepted explanation for corrosion, as being applicable to iron and other metals, is that of electrochemical action. According to this theory, hydrogen falls in the group with copper when compared with the electrolytic behavior of iron and zinc. For example, if a cell were made having iron and hydrogen electrodes, a current would flow when the electrodes were connected, and the iron would dissolve. The fact that iron does dissolve in solutions containing hydrogen ions is well known. There are many phases to this action too extensive to be discussed here (see "Corrosion," by Speller) beyond mere mention of some of the outstanding facts.

The hydrogen must be removed, for if permitted to remain it will act as air insulator on the surface of the metal; the removal agency is usually water, sometimes oxygen. In the presence of neutral or alkaline waters, dissolved oxygen controls the rate, but under acid conditions the reaction depends on the hydrogen concentration, or pH value.

In the refinery, most of the corrosion is confined to iron, resulting from sulphur in some form which originates in the oil or is derived from the chemicals used. There are also such examples as direct action of hydrogen sulphide and hydrochloric acid, a decomposition product formed from chlorides introduced with the crude oil. There are many other instances, among which may be mentioned the corrosion of zinc by the action of alkaline substances and acid fumes, the action of ammonia on copper and brass, and sulphuric acid on all common metals.

There is no known alloy or metal which is commercially adapted to resist each and every type of corrosion. Some alloys have been produced that may be used to advantage for some parts and for small distillation and cracking units, but have been considered too expensive for large pieces of equipment. Highly resistant steel alloys are used in the refineries; these contain nickel, about 6 per cent, and chromium in excess of 15 per cent. These alloys are used for small parts, such as tubes, plates, bubble caps, plugs, returns, etc.

The matter of definite properties and prices is too extensive to be treated here.

References: Speller, "Corrosion, Causes and Prevention." Egloff, "Corrosion in the American Oil Industry," Universal Oil Products Co.

Speed of Flame Propagation From Analysis

I am seeking a method for the calculation of flame propagation from the analyses of natural gas. If you have any suggestions covering the subject, your assistance will be appreciated.—L. C. E.

The rate of movement of flame, commonly called flame propagation, is expressed in terms of centimeters per second. L. M. Van Der Peyl gives in Gas Service Journal, November, 1931, page 11, several curves illustrating flame propagation of pure gases and mixtures when blended with air. Estimation of the speed of flame propagation may be made by the use of a simple mathematical formula.

The one shown by Mr. Van Der Peyl is

$$y = \frac{100}{\frac{p_1}{y_1} + \frac{p_2}{y_2} + \frac{p_3}{y_3} + \text{etc.}}$$

in which y is the percentage of gas in the gas-air mixtures; y_1, etc., are the percentages of the component gases in mixtures with air that give the same speed, and p_1, p_2, p_3, etc., are the percentages of the combustion constituents in the air-free gas mixture. For example, from the curves we find that a speed of uniform movement of 60 cm. per second in a 2.5 cm. tube is had by an 8.8 per cent methane-air mixture and by a 4.7 per cent ethane-air mixture. If, then, we have a mixture of 85 per cent methane and 15 per cent ethane, $p_1 = 85$, $p_2 = 15$, $y_1 = 8.8$, $y_2 = 4.7$ and

$$y = \frac{100}{\frac{85}{8.8} + \frac{15}{4.7}} = 8.2$$

Thus, 8.2 per cent of this methane-ethane mixture in air will have a speed of 60 cm. per second. The curves cannot be reproduced here, so the reference will have to be consulted.

Additional references given in the article are: Payman, Ind. Chem., 20, 1930, 1928; Payman, J. Chem. Soc., 115, 1446, 1919; Bone, Fraser and Winter, Proc. Royal Soc., A 114, 420, 1927.

Different Fats Used for Both Lime and Soda Base Greases

In making lubricating greases what kind of animal fat is the most commonly used? Are different kinds of fats used in making lime base and soda base greases? Are fats or the fatty acids more economical in commercial grease making? A list of books and articles on this subject will be very much appreciated.—L. A. D.

Grease makers utilize a number of different fats, animal and vegetable oils, the selection of the base material depending upon the kind and quality of the grease desired. The largest quantity made is cup grease, for which horse fat, high grade tallows, hog fat, lard oil, tallow oil and other fats are used.

Horse fat is preferred by many grease makers because it produces a cup grease of smoother texture and more unctuous consistency than that produced with other fats. The horse fat should have a fatty acid content ranging between 25 and 45 per cent, the fatty acid content being adjusted by the grease maker with oleic to bring it to a uniform content of 40 per cent. Klemgard, in "Lubricating Greases," states: "Mixtures of lard oil and tallow, however, may be used in the production of lubricants which are believed to be in every way as satisfactory as those in which horse fat alone is employed as a soap stock. Those fats in which the unsaturated fatty material predominates—whale oil, soya bean oil, fish oil, etc.—produce greases of low melting point and slightly rubbery texture.

"It is not apparent that greases made from fatty acids are superior to those made with the whole fats. The fats yield on saponification about 10 per cent of their weight of glycerin, which remains in the grease. If the soap is made before the addition of any mineral oil to the mixture it is possible to recover the glycerin by methods similar to those used in the soap industry. As yet the recovery of glycerin in grease manufacturing has not gained popularity. Many manufacturers use oleic acid alone or in combination with fats in making cup greases, particularly when the reaction is carried out in an open kettle and speed of reaction is an important factor. The use of stearic acid is often resorted to for the production of grease of high melting point; considerable care must be used to prevent lumps of calcium stearate from forming."

Lime is used almost exclusively for making the soap contained in cup grease, the whole fat being saponified and the glycerin formed remaining in the product. The soda base greases may be prepared direct from the fatty acids; the usual practice, however, is to include an animal fat or oil, and sometimes both.

Examples of formulas for each kind of grease are from Klemgard's book:

CUP GREASE, LIME BASE

	Pounds
Horse fat	100
Hydrated lime	15
Water	27.5
Oil 300 vis.	600

CLEAR GREASE, SODA BASE

	Per cent
Fatty acids	6.05
Caustic soda	0.85
Bright stock	90.40
No. 1 tallow	2.70

Articles relating to the manufacturing processes are: "Factors in the Manufacture of Grease," by Simpson and Wilch, The Oil and Gas Journal, March 12, 1931, page 38. "Modern Devices Feature Continental Company's New Grease Plant," same, March 24, 1932, page 26.

The best book on the subject is "Lubricating Greases," by Klemgard.*

*Obtainable through Book Department, The Oil and Gas Journal, upon payment of $5.50.

Zeolite Mineral Substances For Treating Boiler Water

What is the composition of zeolite, which is used for treating boiler water? Will you kindly give me a simple explanation of how such material acts in softening water?—C. S. K.

There are several mineral substances known as zeolites; these may vary somewhat in composition but in general they contain hydrated double silicates of aluminum and an alkaline element which when brought in contact with weak solutions, such as found in ordinary water, will interchange with another element. The fact that these elements are interchangeable is the basis for the action of zeolites in water softening through the removal of such objectionable elements as calcium and magnesium.

The principle cannot be well illustrated without the use of equations. The first represents the action of a sodium zeolite, the first formula, on a water containing calcium bicarbonate, the second formula:

$$2SiO_2 \cdot Al_2O_3 \cdot Na_2O + Ca(HCO_3)_2 = 2SiO_2 \cdot Al_2O_3 \cdot CaO + 2NaHCO_3$$

In this the sodium (Na) zeolite is changed to the calcium (Ca) zeolite and the calcium bicarbonate converted to sodium bicarbonate. In a similar way calcium sulphate is changed to sodium sulphate.

The removal of such substances, as those used in the illustrations, is accomplished by filtering the water through the zeolite.

Zeolites were first put on the market from natural deposits, but they are also prepared by artificial methods.

The zeolite may be recovered by treatment with common salt, as by:

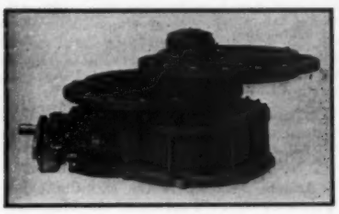
$$\text{Zeolite (CaO)} + \underset{\text{(salt)}}{2NaCl} = \text{Zeolite } (Na_2O) + CaCl_2$$

This means that when all of the sodium in the original zeolite is replaced by calcium, it becomes inactive, but simple washing with a salt solution puts sodium back into the zeolite and it is in condition to be used again.

NEW AND IMPROVED EQUIPMENT

Oilwell Adds to Its Line of Oilbath Geared Powers

The Oil Well Supply Co., Dallas, Tex., has added the Imperial No. 50 to its line of oilbath geared powers. It is of the stationary spindle design, similar in construction to the Imperial No. 80 (eccentric-type). It is smaller than the No. 80,



however, and is rated 50 horsepower at 20 s.p.m. for oil field service. This is a conservative rating since its industrial capacity (Lewis formula) is 172 horsepower at 20 s.p.m.

The double reduction gears are of silent helical type and are fully heat-treated for wear and long life. The main gear and eccentrics revolve as a unit around the stationary spindle which is an integral part of the strong semisteel base. Extra large bronze bushings carry the radial load of the main gear and eccentrics. A heavy duty ball thrust bearing supports the weight of the main gear and eccentrics. The high speed and intermediate speed shafts are mounted in heavy duty Timken tapered roller bearings.

The base and cover form an oiltight and waterproof enclosure for the gears and bearings, which are lubricated by a combination oilbath and positive forced-feed circulation system. The oil pump is mounted on the outside of the gear case where its operation is readily inspected. It forces oil to all the wearing parts through individual oil lines by means of separate plungers, thus assuring ample lubrication at all times. The oil pump is driven by a short chain drive from the high-speed shaft.

The Imperial No. 50 oilbath geared power is equipped with either one or two eccentrics which are regularly furnished for a 24-inch or 30-inch stroke. The eccentric straps are of large cross section, lined with babbitt and provided with forced-feed lubrication. The wearing surfaces are protected from the intrusion of foreign matter. Each eccentric strap is provided with 18 clevis holes which are protected from wear by replaceable hardened steel bushings. The clevis pins are drilled for Alemite lubrication.

The overall reduction ratio, 27.8 : 1, is satisfactory with any type of prime mover ordinarily used in the oil fields. Sturdy and compact construction and minimum height of the pull rod connections above the foundation are some of the outstanding features of this power. It is offered as an efficient and dependable unit for all central power installations within the limits of its capacity and is especially recommended for pumping a large number of shallow wells.

Catalog-Manual 1, issued by Moorlane Co., 409 East Archer Avenue, Tulsa, Okla., is offered "as a guide for those who are interested in the selection and purchase of quality engineering materials and equipment." Besides describing and illustrating pipe fittings for welding, forged steel flanges, flanged unions and other fittings, its 72 pages contain useful tables and engineering information.

Among the Equipment Houses

Culbert Pipe & Fittings Co., 301 West Side Avenue, Jersey City, N. J., announces that owing to ill health its former president, I. T. Culbert, has resigned. E. W. Thompson, vice president, succeeds Mr. Culbert as president.

The Oil Center Tool Co., Houston, Tex., has changed the O-C-T trade-mark from the long used circular design to an attractive perpendicular one, which will be stamped on all future O-C-T equipment.

"Industrial Uses of Stainless Steel" was the subject of a talk delivered before a recent meeting of the American Society of Mechanical Engineers in Cincinnati, Ohio, by C. C. Snyder of the Central Alloy Division, Republic Steel Corp., Massillon, Ohio.

The Louis Allis Co., Milwaukee, Wis., has appointed four new members to its sales organization: C. F. Cate, 212 North Third Street, Albuquerque, N. Mex.; Robert B. Soderberg, 196 Palm Street, Hartford, Conn.; N. O. Lawyer, working out of the company's New York office, 50 Church Street, and G. W. Conner, 1124 Chamber of Commerce Building, Cincinnati, Ohio.

The American Cyanamid Co. has acquired the General Explosives Corp., manufacturer and distributor of blasting caps, dynamite, permissible powders, blasting powders and allied products, with general offices and works in Latrobe, Pa. The General Explosives Corp. will be operated as a division of the American Cyanamid & Chemical Corp., 535 Fifth Avenue, New York.

The United States Stoneware Co., 50 Church Street, New York, has appointed the Merrill Co., of 343 Sansome Street, San Francisco, Calif., as its representative in the distribution of chemical stoneware and corrosion-proof equipment.

F. R. Faulk, 50 Penn Avenue, Pittsburgh, Pa., has been appointed district sales representative for Universal arc welders, accessories and welding electrodes by the Universal Power Corp. of Cleveland, Ohio. The welding Equipment & Supply Co., 2720 East Grand Boulevard, Detroit, Mich., has been appointed distributor for that district.

New Hypressure Jenny to Be Made for Oil Industry

The Homestead Valve Manufacturing Co., Coraopolis, Pa., announces a new fully automatic model of the Hypressure Jenny, its high-powered machine for all-purpose cleaning, paint stripping, or sterilizing. The improved and simplified unit is designated the Model D.

The new model follows the earlier ones in its essential characteristics, the generation of a vapor blast for thorough cleaning, heat, pressure and the proper cleaning solvent or solvents for the work to be done. It is electric-motor driven, operating on lighting current, and is arranged for instant starting from a push-button switch.

The fuel-oil burner used for heat generation is of the pressure atomizing type, used for household heating purposes. Ignition is by an automatic electric spark. The Model D is engineered for one-man operation, and is entirely automatic and self-contained.

Among mechanical improvements is the use of rotary solution water and fuel oil pumps, direct-connected to the one-quarter horsepower motor.

A design especially adapted for use in the petroleum industry is to be put on the market, the company announces.

NEW TYPE THERMOREGULATOR

The American Instrument Co., Washington, D. C., announces a new sealed type mercury thermoregulator which may be set at operating temperature without resort to the trial-and-error methods required by previous designs. To set this regulator, the bulb is immersed in liquid at the temperature at which the regulator is to be set. Time is allowed for the bulb to come to temperature, and the surplus mercury is spilled off into the side reservoir by a quick tipping motion. By this simple operation, the regulator is set within 0.02° C. and then is ready to operate. The sensitivity is ±0.01° C. or better. The setting is not affected by a 20° overshoot in temperature.

High Temperature Thread Dope Offered to Refiners

Metallic lead in a finely divided state, as a thread dope, is offered to refiners by Armite Laboratories, 1900 East Sixty-fifth Street, Los Angeles, Calif. The makers of this new product, called Bestolife, say that a high percentage of that metal, free from oxides or oleates, forms a thin lead film which makes a seal and forms a gald-proof surface on threads. The lubricant is not affected by heat, even up to 1,500° F. studs on headers and elsewhere will not twist off and will easily unscrew, even months after application, leaving a perfect thread, according to the manufacturers.

Superheated steam lines are said to be taken apart easily after an application of Bestolife. Further information about this compound may be obtained by writing direct to Armite Laboratories.

"ARC ARRESTER" IS INTRODUCED

Without introducing mechanical devices to suppress the arc it is possible to speed a.c. arc extinctions with a simple, rugged, single-break type of contactor by inclusion of an "arc arrester." This recent development by Westinghouse for mounting on the base of a contactor or linestarter involves a small unit consisting of a small capacitor and resistor connected across the poles on the load side of the contacting device. Effectiveness of the development is said to be startling. Oscillograms show less than one-half cycle arcing with the arc arrester as against a persistence of five to eight half cycles under otherwise identical conditions without it. This example involved tests at 550 volts, 60 cycles with a 7½ horsepower motor, rotor locked, as load. In practical installations but one unit is required for a three-phase contactor and relief is afforded not only for the contactor, or linestarter upon which it is mounted, but also for any disconnect, operating switch, fuse or other rupturing device connected ahead of the contactor.

Continental Now Making the Woolridge Bulldozer

Woolridge trailbuilders and bulldozers, long established in the national parks, forestry service and western lumber camps, are now manufactured and distributed by the Continental Roll & Steel

Foundry Co., East Chicago, Ind. Continental-built machines are available for the Allis-Chalmers, Caterpillar, Cletrac tractors and McCormick-Deering Trac-TracTor. The Continental Roll & Steel Foundry Co., operating steel plants in East Chicago, Wheeling, W. Va., and Pittsburgh, Pa., has established an industrial equipment division for merchandising heavy tractor-operating equipment. Sales offices have been opened at 332 South Michigan Avenue, Chicago, for the division, with R. W. Moon as manager.

Podbielniak Offers New Fractionating Apparatus

The Podbielniak Industrial Research and Analytical Laboratories announce the establishment of new laboratories, offices and display rooms in Chicago at 222 East Superior Street. The series of low and high precise fractionating apparatus developed, manufactured and distributed by this laboratory has been rounded out by the following additions:

Standard precision model J, No. 451, incorporates the same fractionating column assembly as the well-known model A, but has only one such column and is designed for greatest simplicity and compactness and lowest first cost. Otherwise it is fully as accurate and sensitive as model A, but it is less convenient to use. It may be used either with liquid air or carbon dioxide as cooling medium.

Standard precision model K, No. 455, is somewhat similar to model J in size and appearance, but is designed specifically for the use of liquid carbon dioxide refrigeration for reflux cooling instead of liquid air or nitrogen.

Standard precision model E, No. 795-a, is similar to models B and C widely used in the petroleum and other industries, but incorporates a shorter and less precise fractionating column assembly, and is lower priced. It is intended for uses where a high degree of fractionating effectiveness is desired but where the investment in model B or C would not be justified. A simplified but highly accurate and satisfactory vacuum control apparatus is announced as an accessory to this or other high-temperature distilling apparatus.

Important development work has been done by this laboratory on automatic and partly automatic controls for both the low and high-temperature apparatus. The following are announced: Complete automatic control "robot" operator No. 801, for low-temperature distillation units; reflux cooling and distillation pressure control "partial robot" apparatus, Model No. 850; distillation rate indicator No. 871; reflux cooling and heat supply indicator No. 876, and re-evacuable finely graduated barometer No. 467.

The Ideal Electric & Manufacturing Co., Mansfield, Ohio, has prepared a 16-page booklet on capacitators for power factor correction.

FIELD PROBLEMS FROM READERS

Edited by Thomas F. Smiley

This department is conducted in order that men connected with the drilling, producing and transporting branches of the petroleum industry may obtain aid in solving problems that confront them in their work. Readers are invited to send questions freely. These questions will be placed in the hands of persons capable of answering them authoritatively, and the answers, based on the best available information, will be published.

Each question should give as much detail as possible, especially if it involves depth of sands, types of sands and operations on adjoining or nearby properties. The source of questions will be considered confidential, and only the initials of the sender will be published. Questions involving patented processes, intricate formulas or estimates of cost cannot be answered. If an immediate answer is important, one will be given by mail when the writer requests it.

In this connection, The Oil and Gas Journal will be glad to publish articles from field men who have devised new methods or improved old ones.

Force That Blew Mud From Well Is Believed to Have Been Gas

In reference to the geology of the East Texas Field the production comes from the Woodbine at the base of the upper Cretaceous. As a matter of correlation would you kindly tell me if they drilled through any amount of Tertiary? We have a well at Clarno, Ore., 3,396 feet in the upper Cretaceous. It had possibly 2,500 feet of Eocene. The crew pulled an 80-foot stand of drill pipe and the well had stood for 48 hours when a large volume of mud flowed from the hole. What significance has that? Could it be caused by water pressure? We have good gas shows.—J. W.

Concerning the geology of the East Texas Field, Dr. F. H. Lahee says the surface formations in the area of the pool belong to the Carrizo, Reklaw and Queen City, all Tertiary age and Eocene series. The top of the Navarro, the upper member of the upper Cretaceous formation, next below the Tertiary is found at about 1,800 feet below sea level, or approximately 2,200 feet below the surface.

To the base of the Austin, just above the producing formation from the top of the Navarro, is about 2,000 feet, all upper Cretaceous. The Woodbine is also upper Cretaceous and varies from a few feet to several hundred feet in thickness in the East Texas area (not field). The Woodbine covers about 18,000 square miles in eastern Texas, but all of this formation is not oil bearing.

Apparently your well is about 5,900 feet deep. If you are still in sedimentaries there is a chance that commercial oil or gas may be picked up, but not without structure of some kind being penetrated.

It is not clear what caused the mud to blow out of the hole after the well had stood for 48 hours. It is evident that the pressure built up at the bottom of the hole, or somewhere between the bottom and top, exceeded the downward weight exerted by the mud in the hole.

Without knowing the kind of mud you are using in drilling it is impossible to make any close estimate of pressure exerted by the formation. The only thing that is certain about your well is that there is some kind of pressure in one of the formations greater than the weight of mud column and it would seem that it is gas because if it had been water or oil it would probably have continued to flow after blowing out the slug of mud you describe.

Water pressure usually does not find relief by a sudden explosive force under conditions such as are now considered. However, gas may be entrapped beneath the mud column and enter the fluid in such a quantity as to lighten its weight per cubic foot. Then when the pressure exerted by the remaining column of mud fluid is less than the formation pressure built up by the accumulated gas the slug of mud pops out of the hole like the cork out of a bottle.

Having spewed out the mud and relieved the accumulated pressure the well again is quiet and unless this performance is repeated at somewhat regular intervals it is likely that merely a pocket of gas was encountered. If a gas-bearing stratum had been penetrated the gas would have continued to flow after the mud was blown out of the hole because having removed part of the mud column from the hole the pressure exerted at the bottom of the well or opposite the formation making the gas would be so reduced as to permit of a continued flow of gas, if there had been any appreciable quantity of gas in the formation.

If you desire an interesting book about the geology of your country, it is suggested that you send $1 to the U. S. Government Printing Office, Washington, D. C., for a copy of Bulletin 611, by the U. S. Geological Survey. This is a bulletin of the geology along the northern Pacific route from one end to the other. Bulletin 614, the Shasta route and Coast Line, costs 50 cents. It also can be obtained from the same source.

No Standing Offers of Bonus for Drilling First Flowing Well

Please give me the names of states offering a bonus for the first flowing well drilled within their borders and the amount of the bonus. We believe Nebraska and Washington are two. W. B. F.

This department has no information concerning any states offering a bonus for bringing in the first flowing well. From time to time state legislatures consider resolutions to pay money to the owner of the first oil well drilled in the state. The reason presumably is to attract attention to the state and gain publicity. For definite information it is suggested that you write to the office of the state treasurer of any state which you have reason to believe is offering a "discovery well bonus."

Whether Wells Would Respond to Acid Is Question for Expert

Would first-sand wells in Venango County, Pennsylvania, be likely to respond to acid such as is used in Texas and elsewhere in the Southwest to restore production? Several of these wells in the first Venango sand, drilled 50 years ago, are still making a few gallons daily. They have not been shot since they were drilled in. There is about 40 feet of sand, with the top 580 feet and bottom of hole 620 feet. The initial production ranged from 25 to 125 bbls. and the property has produced a great quantity of oil. Evidently has sand is well saturated and engineers predict that a considerable quantity of oil is yet to be recovered. If you advise use of acid, please suggest course of action to follow. Where may the acid, other than hydrochloric, be purchased? How much is needed for a well? I have read the articles on acid treatment in The Oil and Gas Journal by S. W. Putnam.—H. F. W.

This is a case for a specialist in the use of the acid treatment and the advice of this department is that you get in touch with such a specialist. This course is believed best for the reason that it is extremely easy to get misinformation about acid treatment. Investigation of Pennsylvania sands and some tests of acid treating in that area have been made, so it is safe to say a basis has been provided for an opinion by an expert concerning the particular wells referred to in your question.

An additional and most important reason for consulting a specialist lies in the fact that if a man untrained in this particular tries to do the job himself he is quite likely to inflict serious damage to his well.

Are All Costs Properly Charged Against This Tank Battery?

I enjoyed reading the timely article by Mr. Bignell on "Higher Price for Crude Oil Justifies Setting of Modern Gas-Tight Lease Storage Tanks" in The Oil and Gas Journal of November 16. One of our folks has challenged its arithmetic, or rather its assumptions. He believes the example should be figured about as follows:

With ideal tankage, 100 bbls. of oil, 36 gravity, at $1 per bbl.	$100.00
With present leaky-deck tankage, 94.62 bbls. sold of 34.8-grav. oil at 96 cents per bbl.	90.83
Loss	$ 9.17

Is not the cost of production figured against pipe line runs? If it is, then the addition of the third item would not be applicable. This is a small and rather technical difference. What do you think about it?—G. R.

Readers who desire a more detailed understanding of the point involved than is obtainable from the foregoing question may get it by turning to page 8 of The Oil and Gas Journal of November 16, 1933.

The question raised is admittedly a technical one and perhaps might best be left to the accounting department to decide. Viewed from the standpoint of conservation and mechanical efficiency one is inclined to believe that all costs included in the estimate given in the article of November 16 are properly chargeable to this tank battery.

No one would question the loss if the pumper had filled the 100-bbl. tank with oil and then had broken a connection and lost it all by running it out onto the ground. The cost of pumping the oil then would have been considered and undoubtedly the accounting department would have made some adjustment in its records of cost accounting to take into account the time spent by the pumper in filling the tank with oil.

If loss of oil under such a circumstance would be recognized, it seems to be equally true that evaporation loss from a tank is chargeable against the pumping cost of a lease. The 5.38 bbls. of oil in question has actually been taken from the underground reservoir, and it was at one time in the lease tank. This oil, therefore, must represent mechanical energy expended in lifting it from the bottom of the well and pumping it into the tank.

It is only proper that this loss be charged to any estimate of tank storage losses. Whether the accounting department considers other than pipe line runs in figuring lease expenses does not have any bearing in making this estimate of losses due to evaporation. Some day production men will be inclined to give more serious consideration to items of this kind that constitute losses around the lease, and true conservation of petroleum.

Why Was It Called That?

MOUNTAIN

The word mountain, designating a conspicuous elevation of land, is derived from the Latin mons and the Low Latin montania. Geologists have ascertained that mountains actually grow. Damage aggregating more than $500,000 is reported to have been suffered by 22 oil wells in the Buena Vista Hills, 2 miles north of Taft, in California, as the result of the upward movement of these hills measured at 1¼ inches annually. Oil well casings and pipes that had been in the ground 15 years have been twisted in the form of a croquet wicket with an earth movement of 2¼ feet during that period. Surface faults reveal one upward thrust scarp of a foot, having risen in a few years, another of 4 feet, probably of 50 years growth and a third maximum of 100 feet of perhaps 800 years growth. Latest geological time estimates on the growth of the Sierra Nevada Mountains in California are that they rose 7,000 feet in 1,000,000 to 5,000,000 years.

PERSONAL PARAGRAPHS

W. B. HAMILTON, independent operator, Wichita Falls, Tex., spent several days in Houston, Tex.

* * *

DAVE WALLACE, geologist and operator in East Texas, has recently been in Southwest Texas for a week visiting the oil fields.

* * *

E. Z. HANON, oil scout for the Sinclair Prairie Oil Company at Tyler, Tex., has been transferred to the Gulf Coast district, with headquarters in Houston, Tex.

* * *

L. A. CASEY, oil operator of San Antonio, Tex., has recently been on a trip to Oklahoma City, Okla., accompanied by C. M. HOCKER, of San Antonio, also an oil operator.

* * *

H. LESLIE PARKER, of Denver, Colo., discoverer of the Big Muddy oil field in Wyoming, was injured in an automobile accident near Colorado Springs, Colo., when caught in a whirlwind that turned the car around several times and plunged the machine into a ditch. WILLIAM A. SMITH, of Los Angeles, Calif., a passenger in the car, also was injured. They were taken to a hospital in Colorado Springs.

* * *

J. C. BONHAM, independent oil operator of Houston, Tex., is spending several days in West Texas on business.

* * *

STANLEY WHITING, of Copleston, Ontario, left recently for Toronto, Ontario, to join the staff of the McColl-Frontenac Oil Company.

* * *

E. F. SIMMS, independent oil operator, has been spending a few days in Houston, Tex. He has been making his residence in Kentucky.

* * *

DON J. KIRKLEY, newspaper man of Fort Worth and Houston, Tex., has been appointed co-ordinator of the Petroleum Administrative Board.

* * *

EARL A. SMITH, chief chemist of the Canadian Oil Refineries, Ltd., at Petrolia, Ontario, is in a hospital suffering from a broken knee cap.

* * *

P. N. WIGGINS, JR., independent oil operator of Dallas, Tex., and Tulsa, has been making Houston, Tex., his headquarters while inspecting the Gulf Coast territory.

* * *

JOSEPH E. MORERO, geologist, Skelly Oil Company, in charge of the Gulf Coast district, Houston, Tex., has returned from an airplane trip to the company's general offices in Tulsa.

* * *

HUGH PLAXTON, of Toronto, Ontario, general manager of the Olga Oil & Gas Company, accompanied by his brother from Montreal, recently inspected the company's operations in Kent County, Ontario.

* * *

GRAY I. MORRISS, district manager of National Transit Pump & Machine Company, Houston, Tex., is spending the next few weeks in Oil City, Pa., and plans to stop over en route at St. Louis, Mo.

* * *

G. L. HOVEY, formerly assistant superintendent of the Republic Oil & Refining Company plant, Texas City, Tex., has been made superintendent of the American Petroleum Company refinery, at Houston, Tex.

ADRIAN MOORE, independent oil operator, Houston, Tex., has returned from a week's hunting trip in Mexico.

* * *

DALTON LAIN, of Tulsa, who has been staying in San Antonio, Tex., for some months, has leased a house there and is moving his family.

* * *

W. A. ALEXANDER, production engineer with the Shell Petroleum Corporation at Houston, Tex., has been transferred to West Texas for the next several months.

* * *

JOHN McFADYEN, vice president, and W. B. EMERY, chief geologist, of the Ohio Oil Company, of Casper, Wyo., passed through Denver, Colo., on their way to inspect company holdings in New Mexico.

* * *

L. R. MILLIGAN, assistant to J. R. McWILLIAMS in the Tulsa office of the proration umpire of the Oklahoma Corporation Commission, has resigned, effective December 18. It is reported that Mr. Milligan may go to Washington, D. C., to continue in this line of statistical work which he has followed for several years, previously with RAY COLLINS, state umpire.

THAD O. DAY, of San Antonio, Tex., has recently been on a trip to Bartlesville, Okla.

* * *

J. P. (BUD) O'NEIL, of Tyler, Tex., has been visiting his brother, JOHN T. O'NEIL of San Antonio, Tex.

* * *

C. V. MILLIKAN, chief engineer, production department, Amerada Petroleum Corporation, Tulsa, has been in Texas on company business recently.

* * *

ED DOYLE, for the past two years clerk in the proration umpire's office in Oklahoma City, Okla., has been transferred to Tulsa to act as assistant to J. R. McWILLIAMS, assistant proration umpire, Oklahoma Corporation Commission.

* * *

H. C. BRETSCHNEIDER, former vice president of the Midwest Refining Company; A. D. AIKEN, former vice president of the Salt Creek Producers Association; JAMES OWEN, president of Salt Creek Oil Company; JOHN T. BARNETT, president of the Mountain Producers Corporation; BERNE HOPKINS, and O. H. SHOUP, former president of the Midwest Oil Company, are among well-known Colorado oil men who are going back into mining.

* * *

RALPH STEINMAN, chief scout of the Sinclair Prairie Oil Company of Tulsa, has returned from a visit to the Houston, Tex., office.

* * *

GEORGE JOHNSON, oil scout and land man for the Sinclair Prairie Oil Company at Houston, Tex., has been transferred to the Tyler, Tex., district.

* * *

REX HAMAKER, vice president and general sales manager of the Reed Roller Bit Company, Houston, Tex., has returned from an extended trip to California.

* * *

A. L. CASHMAN, head of the land department of the Skelly Oil Company, Tulsa, has been conferring with the representatives of the company at their office in Houston, Tex.

* * *

E. J. SMITH, vice president of the Pan American Refining Company, of New York City, is spending a few weeks in Texas City, Tex., where the company is erecting a refinery.

* * *

GEORGE E. ROBINSON, chief scout for the Gulf Coast district, and DONALD M. DAVIS, geologist, of the Pure Oil Company, Houston, Tex., are spending their vacations on a hunting trip in Mexico.

* * *

PAUL MEHAFFEY, Tulsa, president of the Happy Belting Company, is now making a trip through Texas, and points in Arkansas and Louisiana where his company has stores and representatives.

* * *

K. A. (GUS) SCHMIDT, geologist for the Tide Water Oil Company, who staked location for the Long Lake discovery well in Anderson County, Texas, has been transferred to Palestine, Tex., from Fort Worth.

* * *

J. L. McMAHON, division manager for the Texas Company, Wichita Falls, Tex., was badly injured in an automobile accident near Grapevine, Tex., on the morning of December 11. He was taken to a Dallas hospital for treatment.

DO YOU REMEMBER?

From The Oil and Gas Journal Files

25 Years Ago

December 20, 1908

Kenton Chickering, vice president of the Oil Well Supply Co. since its formation, died in Oil City, Pa., December 8.

A historian, not identified, writes that the first gas pipe line ever built, was laid by William Murdoch, discoverer of lighting with manufactured gas. It was installed in the Soho works near Birmingham, England, in 1815. It was made of old musket barrels.

W. T. Cushing, who recently resigned as general superintendent of the Texas Pipe Line Co., to engage in the natural gas business for himself, will be succeeded by J. L. Dowling, superintendent of the Oklahoma division.

20 Years Ago

December 25, 1913

The Producers Oil Co., subsidiary of the Texas Company, decides to go into the business of manufacturing gasoline from natural gas and will locate its first plant in the Glenn Pool, Oklahoma.

The Pearson interests having withdrawn from Colombia, the oil fields of that country are again thrown open to competition.

Linn R. Wallace has resigned from the Gypsy Oil Co. to assume the management of the S. Y. Ramage oil properties in the Mid-Continent Field.

Edward A. Latimer resigns as division superintendent of the Prairie Oil & Gas Co.'s pipe line department, headquarters in Tulsa, to begin his duties as assistant to D. C. Stewart, president of the Magnolia Pipe Line Co., Corsicana, Tex. J. R. Manion, succeeds Mr. Latimer, and Martin Loftus takes Mr. Manion's place as a division superintendent in the Kansas territory.

Changes in the Gulf Oil Corp.'s personnel will take effect on January 1, 1914. F. A. Leovy will go to Pittsburgh, Pa., to an executive managerial position. Underwood Nazro will succeed Mr. Leovy in Beaumont, Tex., in charge of the company's Mid-Continent and Gulf Coast interest; C. E. Crawley, Tulsa, head of the Gypsy Oil Co.'s land department, will become assistant to M. M. Doan, general manager of that company; C. R. Gilmore will succeed Mr. Crawley; Charles B. Kuhn will succeed J. H. Yust as traffic manager and executive clerk of the Gypsy Oil Co., as Mr. Yust will go with Cosden & Co., refiners.

10 Years Ago

December 20, 1923

The State of Texas produced 15,894,250 bbls. per day in November, an all-time record of 529,808 bbls. per day.

Walter Fleming, vice president of the Mid-Kansas Oil & Gas Co., has moved to Tulsa with his family.

H. F. Wilcox, of the H. F. Wilcox Oil & Gas Co., predicts that a chain of oil pools will be discovered from the Mid-Continent Field to the Rocky Mountains.

C. C. Stoll, president of the Stoll Oil Refining Co., Louisville, Ky., and Mrs. Stoll, have started on a trip around the world.

Col. Patrick J. Hurley is re-elected president of the Gilliland Oil Co.

ED NEATH, pipe line scout for the Humble Pipe Line Company, Longview, Tex., has just returned from a vacation spent at Houston and San Antonio, Tex.

* * *

A. R. SIMONS, Tulsa oil producer, and MRS. SIMONS, left for Bradford, Pa., on Thursday, December 14, to attend the funeral of Mr. Simons' brother, LESTER H. SIMONS, a leading lawyer in that city, who died very suddenly on Wednesday night.

* * *

W. L. CONNELLY, chairman of the board; D. H. KELSEY, vice president in charge of the land department, and H. C. FITZPATRICK, assistant to the chairman of the board, of the Sinclair Prairie Oil Company, have been in Texas looking over the company's various properties and visiting district offices.

* * *

J. L. McMAHON, district manager of the Texas Company at Wichita Falls, Tex., was injured in an automobile wreck while en route to Dallas to meet officials of his company, which included W. S. S. RODGERS, president, and R. OGARRIO, vice president, both of New York. He was taken to St. Johns Hospital at Dallas, Tex.

* * *

C. B. AMES, chairman of the board of the Texas Company; W. S. S. RODGERS, president; J. H. LAPHAM, chairman of the executive committee; R. OGARRIO, vice president in charge of production; F. T. MANLEY, vice president in charge of refining, all of New York City, stopped over in Houston, Tex., before returning to their home office.

* * *

C. R. McMURRAY, independent operator of Overton and Tyler, Tex., spent several days in Houston, Tex.

* * *

A. B. FOSHEE, independent operator, Gladewater, Tex., spent several days in Houston, Tex., on business.

* * *

J. C. MEYERS, Houston, Tex., geologist, is spending some time in Alabama, where he is doing some geological survey work.

* * *

J. R. PARTEN, vice president and general manager of the Woodley Petroleum Company, Shreveport, La., spent several days in Houston, Tex., on business.

* * *

JOHN R. SUMAN, vice president of the Humble Oil & Refining Company, Houston, Tex., accompanied by MRS. SUMAN, is spending a week in New York City.

* * *

MILLS COX, vice president of the Liberty Pipe Line Company, Houston, Tex., has been elected president of the Baylor University Club, an organization of alumni.

* * *

W. T. DICK, land man for the Superior Oil Company of California, Dallas, Tex., is spending the holidays in California where he was formerly located. MRS. DICK accompanied him.

* * *

P. M. FOWLIE, president of the Shell Oil Company of Canada with headquarters in Toronto, Ontario, left New York City, Saturday, December 16, on the Ile de France of the French line on a trip to European points.

* * *

PHILIPPE BERARD, managing director of the Socony-Vacuum Corporation, and HENRI PAGNY, also connected with the same office as a director, have returned to Paris after a trip to the New York offices of the corporation.

* * *

G. LEGH-JONES, president of the Shell Oil Company of California, San Francisco, accompanied by MRS. LEGH-JONES, were passengers on the Ile de France of the French line which left New York Harbor, December 16, for Plymouth and Havre.

Heads Union's Sales Organization

V. H. Kelly, director of sales of the Union Oil Company of California and vice president of the Union Service Stations, Inc., entered the Union Oil Company's employ as a salesman in Tacoma, Wash., in 1913. Since then he has held successively the positions of special agent in Seattle, manager of the Portland district, manager of the Seattle district, manager of the northern division, chairman of the sales committee and manager of domestic distribution. As director of the sales group of the Union Oil Company, he is in direct charge of refined domestic and export sales, fuel and crude oil sales and the sales organization, facilities and storage and advertising.

V. H. KELLY

Mr. Kelly is recognized as one of the outstanding sales executives on the Pacific Coast, and his advancement from a salesman in the Tacoma district to his present position is attributed to unusual executive ability and initiative. Anticipating the expansion of the Union company in the Seattle district several years ago, Mr. Kelly obtained options on a number of service station sites. As a result of this step it came about that when the directors decided upon expansion the headquarters of the company in Los Angeles had options on sites in the Seattle district in less than a week.

D. M. COLLINWOOD, petroleum engineer, Sun Oil Company, Dallas, Tex., has been in Houston, Tex., on business.

* * *

W. A. ENGLISH, chief geologist for the Superior Oil Company, of Los Angeles, Calif., has returned to his headquarters after a month's stay in Texas where his company has scattered holdings.

* * *

W. A. THOMAS, Pure Oil Company geologist in Michigan, returned from a hunting trip into the big woods of the upper peninsula near Marquette, Mich., with a 201-pound buck deer. It was one of the largest brought back by any Central Michigan hunter.

* * *

W. G. McDONALD, J. R. CANNON and M. D. BROWN, investigators for the Division of Investigations, have been assigned by the Department of the Interior to Oklahoma. Their duties include the handling of all cases of production, refining and marketing.

* * *

R. E. POWELL, manager of the Baytown refinery of Humble Oil & Refining Company, has been re-elected chairman of the joint conference of the employe-employer governing group. H. T. LATHAM, secretary, C. F. KELLY, J. R. SAMWAY, B. S. CULPEPPER and J. C. CATES were elected new members of the conference.

* * *

A. F. PRITULA, chief engineer of oil transport and oil storage for the "Gravnef," U.S.S.R., has made Tulsa his headquarters during the past week while on a tour of inspection through the Mid-Continent producing and refining area. Within another week he will leave for Dallas and Houston, Tex., and then report to the offices of the Amtorg Trading Corporation in New York before returning to Russia.

* * *

JOHN D. ROCKEFELLER, SR., is amused by frequent reports that he is critically ill. His annual southern trip, however, apparently has been indefinitely postponed and it is considered possible that the 94-year-old capitalist will stay at Pocantico Hills this winter. Mr. Rockefeller is said to be recuperating from an attack of grippe. His physician, it was said, finds it no longer necessary to make daily trips.

ROBERT B. VIOLETTE, Fort Worth, Tex., attorney and operator, has been tendered the secretaryship of the Texas refiners committee and is expected to accept same.

* * *

JOHN A. BROWN, recently elevated to chairman of the operating committee of Socony-Vacuum Corporation, will leave Los Angeles, Calif., January 3, 1934, for New York where he will make his headquarters.

* * *

TRONSON DRAPER has returned to Toronto, Ontario, from a trip to Vancouver, British Columbia, and the Turner Valley Field in Alberta. Mr. Draper was formerly western production manager of Imperial Oil, Ltd., and has oil interests in the Canadian West.

* * *

MRS. J. M. BOND, JR., took her first airplane ride when she flew in an ambulance plane from Dallas to her home at Longview, Tex. Mrs. Bond recently underwent a major operation at Baylor Hospital at Dallas and in order to make a short, fast, untiring trip back to her home decided to fly. MR. BOND is a rig building contractor in East Texas.

* * *

R. W. STONE, president of the Stone Oil Company, Houston, Tex., and M. H. STONE, vice president and superintendent of refining, Texas City, Tex.; D. W. HOVEY, vice president and general manager of the Republic Oil & Refining Company, Houston, Tex., and E. L. NOBLE, president, Texas National Bank, Texas City, have been on a hunting trip in the Blanco district of West Texas.

* * *

J. A. SIVALLS, vice president of Black, Sivalls & Bryson, Inc., is ill in Memorial Hospital at Bartlesville, Okla.

* * *

R. C. (RUSS) STAMETS, sales representative of the tubular goods department of the Oil Well Supply Company, is ill at his home in Dallas, Tex. A severe hemorrhage of the stomach necessitated a blood transfusion but recovery had progressed so that he could be removed to his home where he will probably be confined for several days.

* * *

N. B. LARSH, geological scout for the Sinclair Prairie Oil Company, Tyler, Tex., has been moved to Midland to cover West Texas and Lea County, New Mexico. LES FISHER, holding a similar position with the company, has been transferred from Houston to Tyler. GEORGE JOHNSON has been transferred into the land department of the company and moved to Tyler from Houston. JACK CAVE and E. Z. HANNA, scouts, have just changed headquarters, the former moving from Houston to Tyler and the latter to Houston from Tyler. IRA BRINKERHOFF, geological scout, who has been covering the Corpus Christi district, has been moved to Houston and CARL McADAMS was moved from Midland to Beeville to cover the district formerly scouted by Mr. Brinkerhoff.

* * *

JOHN G. (JACK) PEW, headed the Dallas Wildcat Committee, a group of oil men who welcomed the Continental Supply Company to Dallas at a luncheon at the Adolphus Hotel on December 13. Nearly 200 local oil men joined to greet W. J. MORRIS, president of the Continental Supply Company, and 30 others of the company among whom were: E. L. EPPENAUER, D. M. BAILEY, F. M. MAYER, WILLIAM HELDMAR, F. L. BRINEGAR, B. K. KELLY, CHARLES A. GUTGESELL, C. R. GARTRELL, W. F. KEMP, W. G. WOOD, H. E. SPENCER, C. H. MEYER, R. R. LEWIS, HOWARD P. HOLMES, R. E. BELL, C. W. KING, C. E. DURLEY, H. D. NESBITT, C. E. McGINNIS, C. J. HALLORAN, of Tulsa; E. N. WOOD, Shreveport, La.; F. H. THRAILKILL, of Houston, Tex., and R. A. BREWER, of Fort Worth, Tex. EDWARD T. MOORE, president of the Simms Oil Company, and also president of the Texas Division of the Mid-Continent Oil and Gas Association, was official greeter for the Wildcat Committee.

MARKET RECORD OF OIL SECURITIES

In a letter "to the Standard Oil Co. (New Jersey) family, at home and abroad," President Walter C. Teagle says:

Those who keep books strike a trial balance periodically and once a year close the records for 12 months. Our company year ends December 31, but our report is not available for some months afterwards. It is too early to forecast a preliminary statement of operating, but I wish to report to you briefly on our general situation.

It is not with figures that I want to deal in this letter intended to reach you before the turn of the year. Rather, I want to attempt to answer some of the questions which are in your minds. Where do we stand as the time to close the books for 1933 approaches?

The United States, with great natural wealth, its agricultural possibilities and still substantial stores of underground treasure, is not going bankrupt. But it could not function unaffected by the crisis in other countries. Our productive capacity was built to supply a healthy export business. When foreign credit suffered, exports diminished; they have only lately begun to gain. We found ourselves glutted with food stuffs, metals, cotton, coal and oil. Factories shut down or went on part time operation, mines lost their markets, farmers' produce backed up in their barns and one out of every four or five workers in the United States lost his wages. The Federal Government, states, counties and municipalities which had spent money with a prodigal hand in the easy years borrowed more money to care for the unemployed and so added to their debt as to finally stop the credit of some weaker communities. The individual's purchasing power was cut in half, and this has directly affected our business.

Congress enacted legislation giving the President extraordinary powers to meet the crisis. He availed himself of this with the result that some 4,000,000 of the unemployed have again become selfsupporting. Emergency measures have been adopted to stimulate a recovery in commodity prices and make temporary jobs pending a revival of industry.

As a result, business in many lines is markedly better. In our own industry, the Federal Government's control of production has set the stage for a normal recovery and the industry is closing the year with greatly improved prospects. We lost money for the first six months as did practically all integrated oil companies; we have done much better since the stoppage of excessive production and illegal shipments. Business in general is of course subnormal but better than it was in the first half year.

The world is not winding up its affairs. It is still a good world with ample resources to supply a comfortable living for all. The way to recovery is not clear, but it is there for us to find, and out of the manifold experiments a solution will come.

What can the individual do in such a situation? Of what avail are his efforts in such a maelstrom?

It is the individual that makes the nation. It is the sum total of his efforts and his thinking that make it powerful. Courage and faith are not less contagious than fear. As men grope for the truth, public opinion is formed and moves mountains. Amid all the tumult today men are constructing a firmer foundation for the new political economy. We shall work the thing out.

For those who like adventure, whose minds are stimulated by the new and untried, these are challenging times. Each day brings new developments and fresh problems. It is tremendously exciting even though each of us bears his part of the increased cost and receives less income than was the case in better times.

I can wish you no better luck for next year than joy in your work as you tackle new difficulties. There will be defeats and discouragement, but there will be compensating victories.

Sun Oil

Listing on the New York Stock Exchange of 143,200 additional shares of common stock of Sun Oil Co. is pursuant to the recent declaration of the 9 per cent stock dividend on the common, payable December 15 to stock of record November 25. The stock will be charged against earned surplus at the rate of $33.88 a share.

In the listing statement the company says that during the first nine months this year $3,000,000 was expended out of current earnings to increase and perfect its refineries. During the year 1932 new investments, including improvements to refineries at Marcus Hook, Pa., and Toledo, pipe lines in the oil fields and in East Texas, totaled approximately $5,200,000.

Twenty Representative Stocks

The Oil and Gas Journal's weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange and New York Curb, based on closing quotations, was as follows:

June 7	21.53	Sept. 13	25.45
June 14	25.44	Sept. 20	25.28
June 21	23.09	Sept. 27	23.01
June 28	23.86	Oct. 4	23.29
July 5	25.20	Oct. 13	22.73
July 12	25.74	Oct. 21	20.53
July 19	24.89	Oct. 28	22.62
July 26	22.25	Nov. 4	22.81
Aug. 2	20.39	Nov. 11	23.76
Aug. 9	22.29	Nov. 18	25.17
Aug. 16	21.05	Nov. 23	24.61
Aug. 23	23.40	Nov. 28	24.30
Aug. 30	24.04	Dec. 7	24.53
Sept. 6	24.68	Dec. 14	24.50

Associated Gas

In a letter to holders of its convertible obligations, the Associated Gas & Electric Co. states that more than 40,000 debenture holders have deposited in excess of $80,000,000 of their securities under the company's plan for rearrangement of debt capitalization. The letter criticized "obstructionists" to the plan and stated that holders who understood the company's problems realize the necessity for adopting it. Taxes, encouragement of municipal power enterprises and rate reduction orders, coupled with an attempt to raise commodity prices, make it necessary to rearrange the capital structure in order to keep the company intact and to build up its credit, it was stated.

The debenture holders were asked to

Independent Oils on New York Curb

Quotations Compiled by Francis, Bro. & Co., Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.

(Complete record week ended December 9)

1933 High	1933 Low	Week ended December 9 Sales	High	Low	Close	Stocks		Outstanding capital	Par value	Div. rate	Payable or last paid	1930 High	1930 Low	1931 High	1931 Low	1932 High	1932 Low
2⅜	7/16	6,400	1⅛	11/16	1	American Maracaibo	(sh)	700,000	N.P.	....	.....	4½	½	1¾	¼	¾	¼
5½	1⅛	400	1¾	1⅝	1¾	Arkansas Natural Gas	(sh)	4,084,225	N.P.	....	.....	16¾	4⅝	6½	1⅞	3¾	¾
4	1	2,800	1⅝	1	1	Arkansas Natural Gas "A"	(sh)	3,522,521	N.P.	....	.....	16⅝	4⅝	6¾	1⅞	3⅜	½
4⅞	2	700	3	2¾	3	Arkansas Natural Gas pfd.	(sh)	2,193,000	$10	....	4- 1-32	8⅛	6¼	7	3⅞	5⅝	1½
14¾	6⅛	No sales ..	..	..	..	British American Oil Corp.	(sh)	2,622,642	N.P.	20cQ	3-14-33	23	13⅜	16⅞	6¼	9¾	6¾
7¾	¼	4,800	4⅛	3¾	4⅛	Carib Syndicate	(sh)	579,000	25c	....	.....	2¾	⅝	2⅜	¼	¾	¼
6¼	1⅞	28,000	2	1⅞	1⅞	Cities Service	(sh)	36,979,065	N.P.	....	6- 1-32	44¼	13	20¾	5	6⅞	1¼
30	10½	1,100	12⅛	11½	11½	Cities Service pfd.	(sh)	1,125,931	N.P.	....	6- 1-31	93⅞	78¼	84¾	35⅜	53⅜	10
2½	⅝	2,500	⅞	¾	¾	Columbia Oil & Gasoline v.t.c.	(sh)	2,000,000	$1	....	.....	¾	⅛	½	1/16	2⅛	½
4	¼	1,000	1½	1⅛	1⅛	Colon Oil	(sh)	2,200,000	N.P.	....	.....	8¼	1⅛	3⅛	¼	1¼	¼
2⅛	1	No sales ..	..	..	..	Consolidated Royalty Oil Co.		$5,527,880	$10	5cQ	1-25-33	5⅞	2	2¾	1	2	1
3⅞	2	600	2¾	2¼	2¾	Cosden Oil	(sh)	323,950	N.P.	....	.....	74¾	1¼	3¾	⅜	2⅞	¼
8	2⅛	1,300	6¼	5⅜	6⅛	Darby Petroleum	(sh)	609,696	N.P.	....	10-15-30	21¾	4¼	5	1¾	7⅛	1⅝
2¾	⅞	No sales ..	..	..	..	Derby Oil & Refining	(sh)	500,000	N.P.	....	.....	11	2	6	1½	3	1
62	24	8,500	59¼	56	58¾	Gulf Oil Corp.	(sh)	4,504,921	$25	....	10- 1-31	166⅞	58½	75½	25⅜	44¾	23
6½	1¼	100	3	3	3	Indian Terr. Illum. Oil "B"	(sh)	7,090,037	N.P.	....	.....	53½	12⅝	16⅞	5	4½	1½
2	⅝	200	1¼	1⅛	1⅛	Kirby Petroleum	(sh)	750,000	N.P.	10c	4-15-33	3	⅞	1⅞	¼	1	⅜
1½	⅛	500	⅜	⅜	⅜	Leonard Oil & Development		$50,000,000	$25	....	.....	5	¾	2	½	¾	⅛
2¼	7/16	5,700	1⅞	1⅝	1⅞	La. Land & Exp.	(sh)	3,000,000	N.P.	....	.....	4⅜	½	1½	¼	2½	½
9½	1¼	100	5½	5½	5½	Lion Oil & Refining	(sh)	250,000	N.P.	....	10-27-30	29	4⅞	6¾	1½	3½	⅞
12⅞	4¾	1,600	6¼	5⅞	6¼	Lone Star Gas	(sh)	5,000,000	N.P.	16cQ‡	3-31-33	55⅞	19⅝	25	5½	11	3⅜
6½	2⅛	300	3¼	2¾	3	Memphis Natural Gas	(sh)	920,000	N.P.	....	4-15-32	22¼	7½	12⅛	4½	5¼	1⅝
5	2	No sales ..	..	..	..	Mexico-Ohio Oil Co.		500,000	N.P.	....	.....	7½	1¾	4⅞	1½	3⅜	1½
1¼	1	400	½	⅜	⅜	Mountain & Gulf		$4,000,000	$1	....	4-15-31	¾	⅜	½	⅛	⅜	⅛
6½	2½	800	4⅝	4⅜	4½	Mountain Producers		$1,682,182	$10	20cQ	4- 1-33	12½	3¾	5⅞	2	4¾	2½
20	10	400	13⅝	13⅜	13⅝	National Fuel Gas	(sh)	3,810,183	N.P.	25cQ	1-16-33	41⅜	19⅜	28½	9¾	14⅝	8
2⅛	½	10,700	2⅛	1½	2	New Bradford Oil		$7,224,186	$5	....	4-15-31	3½	1⅛	1½	½	⅞	⅜
1⅞	½	300	1	1	1	New Mexico and Arizona		$1,000,000	$1	....	.....	7¼	1½	3	¾	1¼	⅜
5	½	200	3	3	3	North Central Texas	(sh)	262,446	$5	....	9- 2-30	11¼	2½	3¼	⅝	1½	⅝
½	1/16	No sales ..	..	..	..	North European Oil	(sh)	1,372,391	N.P.	....	.....	6¼	⅝	2⅛	¼	⅜	1/16
7½	3	No sales ..	..	..	..	Pacific Western Oil	(sh)	1,000,000	N.P.	....	.....	19½	5½	15	2⅞	8	3
3¾	⅛	9,100	1½	1⅛	1⅜	Pantepec Oil	(sh)	1,595,500	N.P.	....	.....	4⅜	⅞	2	⅜	⅝	1/16
1⅞	¼	700	1	⅝	1	Reiter-Foster	(sh)	388,584	N.P.	....	12- 2-29	5⅜	1	3⅛	¼	½	1/16
2¼	¼	1,100	½	.. ½	½	Richfield Oil pfd. x.w.	(sh)	399,950	$25	....	.....	23½	6½	11	¼	1	⅛
4¼	⅝	1,000	1⅜	1¼	1⅜	Ryan Consolidated	(sh)	296,931	N.P.	....	.....	8⅝	2	3	¾	2⅛	⅝
1	⅜	600	⅝	½	½	Salt Creek Consolidated	(sh)	1,286,300	$10	....	4- 1-31	2½	½	1⅜	⅛	⅞	⅛
9¼	3½	1,000	6	5½	5½	Salt Creek Producers	(sh)	1,496,859	$10	25c	2- 1-33	15¼	5¼	7¾	2¾	5½	2⅞
1½	¼	2,200	¾	1/16	1/16	Sunray Oil	(sh)	1,163,185	$5	....	4-15-31	10	2	5¼	¼	⅝	¼
13	6¼	1,200	7	7	7	Texon Oil & Land	(sh)	936,036	N.P.	25c†	12-30-32	19½	8	12⅞	2½	10½	4½
1½	⅛	1,200	⅝	⅝	⅝	Venezuelan Petroleum	(sh)	755,090	$5	....	2-15-30	4¼	⅜	1⅞	⅛	1/16	⅛
3¾	1½	600	3	3	3	Woodley Petroleum		$500,000	$1	....	3-31-29	5	½	3½	1⅛	2⅜	1⅛

*Ex-dividend. †Plus extra dividend of 25 cents. ‡Payable in stock. §Paid in lieu of regular cash dividend of 2 per cent.

co-operate with the management in such efforts.

Consolidated Oil

Consolidated Oil Corp. is not required by its listing agreement to publish financial reports more than once a year for the last fiscal year. There is no doubt, however, that for the first six months this year, as with most all other units, the company had a net loss. In July and subsequent months conditions underwent a change for the better, due in large measure to the oil code, and the company has been progressively in the black. It is impossible as yet, due to possible year-end adjustments, to determine to what extent the improved operations in the latter half of the year offset the loss in the first six months.

For the 11 months ended December 31, 1932, Consolidated reported net income of $1,601,039, equal to 5 cents a share on the 14,218,835 no-par common shares outstanding, after deduction of the period's dividend requirements on the 111,594 shares of 8 per cent preferred. The company has been steadily reducing the senior stock outstanding and also the bonded debt, of which $38,978,700 of 7 per cent Series A, maturing March 15, 1937, and $18,741,000 of 6½ per cent Series B, maturing June 1, 1938, were outstanding at the end of 1932.

At the 1932 year-end current assets were $119,832,674, with cash $38,950,857 and marketable securities $5,794,469. Its large inventories of crude and refined oils, at lower than the then market, were carried at $55,682,788.

Standard Oil Stocks on New York Curb

Quotations Compiled by Francis, Bro. & Co., Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.

(Complete record week ended December 9)

1933 High	1933 Low	Week ended December 9 Sales	Week ended December 9 High	Week ended December 9 Low	Week ended December 9 Close	Stocks—		Outstanding capital	Par value	Div. rate	Payable or last paid	1930 High	1930 Low	1931 High	1931 Low	1932 High	1932 Low
13	6	No sales ..	..	..	..	Borne Scrymser		$1,000,000	$25	....	10-15-30	25	11¼	16	6	7	6
39¾	25	No sales ..	..	..	..	Buckeye Pipe Line		$10,000,000	$50	75cQ	6-15-33	69	39⅞	56	30	35	17½
129	71	200	129	124½	126	Chesebrough Mfg.		$3,000,000	$25	$1Q‡	6-29-33	184⅞	104¼	129½	75	90	53
12	2¼	14,400	10⅝	10	10⅝	Creole Petroleum	(sh)	6,974,356	$5	....	.....	7⅞	3	3⅞	1⅝	3⅛	1¾
41¾	20	No sales ..	..	..	..	Eureka Pipe Line		$5,000,000	$100	$1Q	8- 1-33	54¾	26	36	19	35	18
104¼	40	13,500	104¼	97¾	103⅞	Humble Oil & Refining		$74,365,725	$25	50cQ	7- 1-33	119	57¼	72	44¼	55	35⅝
15⅞	6½	7,400	14¼	13⅞	14	Imperial Oil of Canada	(sh)	26,557,496	N.P.	12½cQ	9- 1-33	30	15	18¼	7⅜	10⅞	6¼
8	3⅛	No sales ..	..	..	..	Indiana Pipe Line		$3,000,000	$10	15cS.A.	5-15-33	41	14½	21⅜	5½	7½	2¾
23½	8⅞	8,400	21½	21	21½	International Petroleum	(sh)	14,247,088	N.P.	28cQ§	6-15-33	24	11⅜	15½	7⅜	12¼	8
10	5½	No sales ..	..	..	..	National Transit		$6,362,500	$12.50	35cS.A.	6-15-33	22⅜	11½	17½	5	10½	6
4⅞	3	No sales ..	..	..	..	New York Transit	(sh)	500,000	$5	15cQ	4-15-33	21⅜	10⅛	14½	5⅞	6	2¼
6⅛	4¼	600	5⅜	4¾	4¾	Northern Pipe Line		$1,200,000	$10	25c	7- 1-33	54	26¼	35½	20	5½	3⅛
22⅛	11	2,300	20¼	19	19½	South Penn Oil		$30,000,000	$25	25cQ	3-31-33	45⅞	16⅛	23⅞	9¼	16½	9⅝
6	2¾	100	3⅝	3⅝	3⅝	Southern Pipe Line		$1,000,000	$10	10cQ	3- 1-33	20⅞	8⅜	17	7	10	3¾
43	24½	No sales ..	..	..	..	Southwest Pennsylvania Pipe Line		$1,750,000	$50	$1Q	7- 1-33	64	32	42½	25	37	27
34	17	19,600	33	32½	32⅞	Standard Oil of Indiana	(sh)	15,941,895	$25	25cQ	6-15-33	59⅞	30	38½	13½	25⅛	13⅛
19¼	8⅜	2,300	15⅝	14⅞	15	Standard Oil of Kentucky		$26,069,830	$10	25cQ	6-15-33	40½	18⅝	23⅝	12½	15⅞	8⅞
20½	11	300	14⅞	14½	14½	Standard Oil of Nebraska		$4,770,550	$25	25cQ	9-20-33	48⅞	34⅝	36½	16	19	10¼
41	15½	450	26	24½	25½	Standard Oil of Ohio		$18,811,675	$25	37½cQ	1- 3-33	108½	43¼	62½	23	30⅛	15½
3	1	No sales ..	..	..	..	Swan-Finch Co.	(sh)	34,480	$25	....	1-15-29	10	4	4½	1	2	1⅝

*Ex-dividend. †Unit of trading less than 100 shares. ‡Plus 50 cents extra. §Payable in Canadian funds.

Transactions in Oil Shares on New York Stock Exchange

Quotations Compiled by Francis, Bro. & Co., Members of the New York Stock Exchange and Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.

(Complete record week ended December 9)

1933 High	1933 Low	Week ended December 9 Sales	Week ended December 9 High	Week ended December 9 Low	Week ended December 9 Close	Stocks—		Outstanding capital	Par value	Div. rate	Payable or last paid	1930 High	1930 Low	1931 High	1931 Low	1932 High	1932 Low
47⅝	18½	3,500	45⅞	43¼	44	Amerada Corp.	(sh)	774,875	N.P.	50cQ	7-31-33	31½	16½	23	11¼	22¾	12
35½	6¾	No sales ..	..	..	..	Associated Oil		$34,356,180	$15	25cQ	.....	51	30	31	8¾	16½	6½
32½	12⅝	18,400	31½	29½	30⅝	Atlantic Refining		$67,416,050	$25	25cQ	6-15-33	51⅜	16⅝	23⅝	8⅝	21⅞	8⅝
11	3	18,600	9½	8⅞	9⅜	Barnsdall Corp. A		$11,293,895	$5	....	5-11-31	34	8⅝	14½	4	7	3⅜
28⅛	9	57,000	12¼	11⅛	11⅝	Columbia Gas & El.	(sh)	11,684,220	N.P.	20cQ§	5-15-33	87	30⅝	45⅝	11⅝	21	4¼
12	5¼	No sales ..	..	..	..	Colonial Beacon Oil	(sh)	1,444,970	N.P.	....	12-22-22	20⅜	8⅜	10½	7½	12½	9
15¾	5	64,600	11⅞	10⅞	11⅞	Consolidated Oil Corp.	(sh)	14,218,835	N.P.	....	.....	..	..	..	..	9	4
19⅝	4⅞	31,900	18¾	17¾	18⅝	Continental Oil of Delaware	(sh)	4,738,593	$5	....	12-15-27	30½	7¾	12	5	9⅜	3⅝
43¼	13¾	15,100	32¾	28½	32¾	General American Transportation		751,638	N.P.	25cQ	1- 2-33	111⅞	53⅛	73⅛	28	35¾	9½
27	4⅝	8,600	18⅛	15⅝	18⅛	General Asphalt	(sh)	413,333	$10	....	6-15-32	71½	22⅜	47	9⅝	15½	4⅝
38	8¼	500	25¼	25	25	Houston Oil		$24,968,600	$100	....	10-17-30	116⅞	29¼	68½	15¾	28¼	8¾
4½	1⅛	400	3	3	3	Indian Refining		$12,564,070	$10	....	10- 1-30	17	2	4⅝	1⅛	2¾	1
4	⅝	800	2	1½	1⅝	Louisiana Oil Refining	(sh)	1,309,069	N.P.	....	.....	12	3½	4½	1	2¼	½
4	½	100	1½	1½	1½	Maracaibo Oil	(sh)	330,000	N.P.	....	.....	10⅜	1⅜	3¾	½	1½	⅝
16	3¾	12,900	14	12¾	13½	Mid-Continent Petroleum	(sh)	1,857,912	N.P.	....	2-16-31	32	11	16⅜	5	8⅞	3¾
28⅝	4	900	15	14⅛	15	National Supply of Delaware	(sh)	390,879	$25	....	5-15-31	124¾	60	70¼	5	13	3½
17⅝	4¾	34,700	14¾	14	14¾	Ohio Oil	(sh)	6,562,005	N.P.	....	12-15-32	32	16	19½	5⅛	11	5
14	8	No sales ..	..	..	..	Pan American P. & T.	(sh)	3,416,082	$5	....	3-15-33	46½	42	35⅛	20	14	6
4¼	⅜	300	1½	1½	1½	Panhandle P. & R.	(sh)	198,770	N.P.	....	.....	12¾	1¾	4¼	⅝	1¼	¼
18¾	4¾	19,500	17⅛	15⅞	16¾	Phillips Petroleum	(sh)	4,156,908	N.P.	....	1- 2-31	44⅝	11½	16⅝	4	8⅛	2
1⅞	¼	1,900	⅞	¾	¾	Pierce Oil Corp.		$29,622,831	$25	....	.....	2½	½	1½	¼	¾	¼
2¾	⅝	1,500	1½	1¼	1⅜	Pierce Petroleum	(sh)	2,500,000	N.P.	....	2-16-31	7⅛	1⅛	3⅜	½	1⅝	½
17⅝	6¾	12,500	15½	14⅜	15⅛	Plymouth Oil Co.	(sh)	1,050,000	$5	75cA	.....	..	..	..	..	12½	8½
15½	5⅜	No sales ..	..	..	..	Prairie Oil & Gas		$61,035,800	$25	....	3-31-31	54	11¼	20⅜	4⅛	9½	3½
22	7	No sales ..	..	..	..	Prairie Pipe Line		$101,250,000	$25	....	6-30-31	60	16⅝	26½	5⅞	12¼	5½
2⅞	¼	72,000	⅝	⅜	⅝	Producers & Refiners		$37,438,950	$50	....	9-15-23	11⅞	1	6	1	1⅝	⅛
13	2	600	4	4	4	Producers & Refiners pfd.		$2,845,350	$50	....	5- 4-25	40	11½	16	3	9¾	1
15⅜	2½	12,500	12⅝	11⅝	12	Pure Oil		$75,959,250	$25	....	9- 1-30	27¼	7⅝	11⅞	3¼	6½	2⅞
39¾	17⅝	1,200	37¾	36¼	36½	Royal Dutch N. Y.	(sh)	611,303	....	80½cf	8- 5-32	56½	36⅞	42⅝	13	23⅜	12⅛
43⅜	15	5,900	35	33¼	34½	Seaboard Oil of Delaware	(sh)	1,204,460	$4	15cQ	9-15-33	37	9¾	20¾	5½	20⅜	6⅝
24¾	11¼	No sales ..	..	..	..	Shell Transport & Trading Co.		£23,985,000	£1	53cf	7-22-32	48⅜	26	34	5	16⅜	8
11⅝	4	6,200	8⅝	8	8½	Shell Union Oil	(sh)	13,066,497	N.P.	....	6-30-30	25½	5¼	10¼	2½	8¾	2½
61	28½	500	57	55¼	57	Shell Union Oil pfd	(sh)	400,000	$100	....	7- 1-31	106¼	55	78	15	65¼	18
12⅜	4⅞	1,100	10½	10	10⅛	Simms Petroleum	(sh)	600,000	$20	25cQ	1-16-32	37	5⅝	11	3½	7½	3¼
9⅞	3	1,000	9	8½	8⅝	Skelly Oil		$27,441,250	$25	....	12-15-30	12	10⅛	12⅞	2	5⅜	2½
57½	22	200	54	54	54	Skelly Oil pfd.	(sh)	119,800	$100	....	5- 1-31	99¾	42	62	10	33½	12
17	6	108,200	16⅝	15¾	16¼	Socony-Vacuum		$792,711,738	$25	....	3-15-33	106⅝	98	106	87⅛	12¼	5¼
102¾	92½	1,600	99	95½	98½	Standard Oil Export pfd.	(sh)	764,885	$100	$2.50SA.	12-31-32	..	..	21	8⅜	100½	81
45	19½	21,833	42⅝	41¼	42	Standard Oil of California	(sh)	13,102,900	N.P.	25cQ	6-15-33	75	42½	51¾	23⅛	31⅞	15⅛
39½	12¾	1,100	39½	36½	39	Standard Oil of Kansas		$8,000,000	$25	....	3-16-31	49	14⅜	19	7¾	16½	7
47½	22¾	43,600	47¾	46	46½	Standard Oil of New Jersey		$637,961,700	$25	50cS.A.	6-15-33	84⅞	32½	52½	26	37⅜	19⅞
59	35	900	53½	51¼	51½	Sun Oil	(sh)	1,531,422	N.P.	25cQ	6-15-33	70	39	45¼	26¾	39⅞	24⅝
4½	¾	2,500	2⅜	2	2⅛	Superior Oil Corp.	(sh)	776,979	N.P.	....	12-20-30	9⅜	¾	1⅜	¼	2	¼
30¼	10¾	23,600	26½	25½	26⅛	The Texas Corporation		$246,204,900	$25	25cQ	7- 1-33	60½	28¼	36¼	9⅞	18¼	9¼
6½	1⅜	4,400	3½	3	3	Texas Pacific Coal & Oil Co.		$9,304,890	$10	....	12-31-29	14½	4	6½	1⅞	4	1½
21	9¼	No sales ..	..	..	..	Tide Water Oil	(sh)	2,190,323	N.P.	....	12-31-32	31	13	18	9⅞	10	5
77	45	200	76	76	76	Tide Water Oil pfd.	(sh)	199,446	N.P.	....	2-15-33	94⅞	71	83	30	62	30
11¾	3½	27,100	10⅜	9⅞	10⅜	Tide Water Associated	(sh)	5,611,100	N.P.	....	2-16-31	17¾	5⅞	9	2⅛	5⅝	2
65¼	23½	3,600	64	61¼	63	Tide Water Associated pfd.		$73,284,500	....	....	1- 1-33	89¾	55	68	20½	60	20
23⅝	8½	27,200	20⅝	19⅜	20	Union Oil of California	(sh)	4,386,070	$25	25cQ	8-10-33	50	10⅛	26⅝	11	15⅜	8
22¾	10½	1,600	15¾	14¾	15½	Union Tank Car	(sh)	1,254,048	N.P.	30cQ	6- 1-33	38½	23	25⅛	16	19¼	11¾
4⅞	⅝	No sales ..	..	..	..	Warner-Quinlan	(sh)	632,948	N.P.	....	7- 1-30	27	4¼	7⅜	⅞	2¼	½
5½	2	3,400	4¼	3¾	4⅛	Wilcox Oil & Gas	(sh)	428,967	$5	....	5-10-28	21	6½	9⅜	2¾	8¾	2¾

*Ex-dividend. †Interim dividend for 1931. §Payable in 5% convertible preferred stock. A—Paid this year; no regular rate.

In comparing highs and lows for the several years in the three tables, it will be necessary to take into consideration cases where there have been stock split-ups.

Oklahoma-Kansas and Eastern Monthly Pipe Line Report

OKLAHOMA-KANSAS PIPE LINE STATEMENT FOR SEPTEMBER

Runs

Company—	Month (bbls.)	Dy.av. (bbls.)
Gulf Pipe Line Co.	1,314,706	43,824
Texas P. L. Co.	600,515	20,017
Empire P. L. Co.	2,501,941	83,398
Magnolia P. L. Co.	1,262,576	42,086
Cosden P. L. Co.	915,561	30,519
Stanolind P. L. Co.*	3,360,000	112,000
Oklahoma P. L. Co.	2,757,372	91,912
Other lines*	7,860,000	262,000
Total September	20,572,671	685,756
Total August	22,838,708	736,732
Difference	2,266,037	50,977

Shipments

Gulf P. L. Co.	1,528,523	50,951
Texas P. L. Co.	796,264	26,542
Empire P. L. Co.	2,419,828	80,661
Magnolia P. L. Co.	1,241,134	41,371
Cosden P. L. Co.	874,499	29,150
Stanolind P. L. Co.†	4,485,000	149,500
Oklahoma P. L. Co.	2,718,581	90,619
Other lines*	6,060,000	202,000
Total September	20,123,829	670,794
Total August	19,882,017	641,355
Difference	241,812	29,439

Stocks

Sinclair Prairie Oil Mktg. Co.*	29,542,000
Gulf P. L. and Gypsy Oil Co.	7,607,347
Texas Co.	4,747,079
Empire P. L. Co.	5,911,130
Mid-Continent Pet. Corp.	2,642,268
Magnolia Pet. Co.	7,460,121
Stanolind Crude Oil Pur Co.*	13,162,000
Oklahoma Pipe Line Co.	1,304,019
Carter Oil Co.	2,518,388
Other lines*	19,804,903
Total September	94,509,255
Total August	94,496,755
Difference	102,500

*Estimated. †Stanolind Pipe Line Co. shipments include Texas crude oil.

EASTERN PIPE LINE REPORT FOR MONTH OF OCTOBER

Runs From Wells

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky, Illinois, Indiana and Michigan for September and October:

	Sept., 1933	Oct., 1933
Nat. Transit	278,357.47	291,401.52
S. W. Pa. P. L.	71,457.72	76,986.05
Eureka P. L.	275,260.78	299,836.34
Buckeye P. L. (Macksburg)	245,044.65	261,510.57
Buckeye P. L. (Cleveland)	10,137.70	11,549.86
Buckeye P. L. (Lima, etc.)	66,050.77	70,474.35
Stoll Oil Ref.	26,433.00	26,919.00
Bradford Tran.	422,999.86	445,585.26
N. Y. Transit	31,777.52	37,133.38
Tide Water P. L.	21,300.98	22,491.64
Pure Oil	737,296.96	754,603.48
Daugh'ty Ref.	526.00	794.00
Valvoline Pipe	75,415.56	86,959.65
Other companies	223,760.47	239,032.00
Total	2,495,813.44	2,625,277.50
Daily average	83,193.78	84,686.37

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for September and October:

	Sept., 1933	Oct., 1933
Nat. Transit	513,071.68	564,777.36
S. W. Pa. P. L.	480,278.79	422,939.38
Eureka P. L.	279,563.41	287,229.58
Buckeye P. L. (Macksburg)	359,900.91	256,564.17
Buckeye P. L. (Cleveland)	1,463.24	1,941.50
Buckeye P. L. (Lima, etc.)	1,548,524.14	1,948,096.57
Indiana P. L.	892,003.38	893,175.98
Bradford Tran.	378,457.87	356,110.56
Southern P. L.	29,270.09	29,977.38
Tuscarora Dev.	285,395.59	308,172.65
N. Y. Transit	183,857.99	182,694.85
Northern P. L.	151,479.61	138,692.91
Tide Water P. L.	514,383.41	226,248.96
Pure Oil	683,718.94	686,421.04
Valvoline P. L.	37,582.65	43,797.22
Other companies	179,942.94	198,403.73
Total	6,387,393.74	6,645,225.84
Daily average	212,913.12	214,362.17

Gross Stocks

The gross stocks held by various pipe lines in the oil-producing sections of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky at the close of September and October:

	Sept., 1933	Oct., 1933
Nat. Transit	455,553.29	418,056.64
S. W. Pa. P. L.	367,913.26	316,822.16
Eureka P. L.	819,400.61	802,223.18
Buckeye P. L. (Macksburg)	303,843.61	268,025.63
Buckeye P. L. (Cleveland)	43,672.06	42,574.98
Buckeye P. L. (Lima, etc.)	2,188,677.75	2,331,039.86
Indiana P. L.	487,046.74	430,438.49
Bradford Trans.	151,875.89	245,217.79
Southern P. L.	117,350.27	136,034.46
Tuscarora	6,538.41	6,149 58
N. Y. Transit	97,125.14	109,286.44
Northern P. L.	172,967.67	198,138.67
Tide Water P. L.	708,543.08	707,797.68
Pure Oil	442,352.45	549,670.40
Valvoline	111,015.73	124,300.28
Other companies	127,253.17	117,032.94
Total	6,601,134.13	6,852,809.18
Decrease	16,142.47	
Increase		251,675.05

Grades of Oil

The following tabe shows the amount of the different grades of oil held by the eastern pipe lines at the close of September and October, showing gross stocks of the above fields:

	Sept., 1933	Oct., 1933
Pennsylvania	2,426,155.20	2,539,529.90
Lima	453,465.05	442,727.34
Kentucky	563.32	
Mid-Continent	3,326,914.57	3,368,606.00
Illinois	10,297.73	10,621.83
Michigan	383,738.26	491,314.11
Total	6,601,134.13	6,852,809.18

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1930	1931	1932	1933
Jan.	75,907	53,939	55,501	64,493
Feb.	79,256	55,163	55,493	58,140
Mar.	76,688	54,331	57,199	59,417
Apr.	84,536	54,914	57,348	61,812
May	70,546	53,344	59,105	65,755
June	75,430	54,110	64,371	67,370
July	68,921	50,723	63,402	68,100
Aug.	54,291	51,503	67,676	77,537
Sept.	56,595	61,345	65,423	83,193
Oct.	58,179	65,595	65,960	84,686
Nov.	52,332	59,819	60,602	
Dec.	53,999	61,835	57,401	

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

	1930	1931	1932	1933
Jan.	217,623	175,269	186,551	198,996
Feb.	224,355	183,494	169,856	187,928
Mar.	228,846	189,508	188,793	183,632
Apr.	241,845	191,450	202,036	181,940
May	248,383	199,247	201,404	199,671
June	234,401	221,155	201,632	211,980
July	207,094	211,633	202,859	213,417
Aug.	205,506	224,166	187,859	211,128
Sept.	193,999	217,537	170,524	212,913
Oct.	157,675	210,821	188,504	214,362
Nov.	146,638	196,425	189,626	
Dec.	143,001	176,241	186,135	

Gross Receipts

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines at the close of each month for the past three years:

	1931	1932	1933
Jan.	11,831,092	9,023,914	7,608,270
Feb.	11,506,489	8,974,350	7,302,744
Mar.	11,012,162	8,802,192	7,279,843
Apr.	11,044,481	8,903,461	7,212,548
May	10,728,239	8,835,726	7,016,621
June	9,303,349	8,732,724	6,766,038
July	9,569,849	8,176,956	6,713,942
Aug.	9,192,457	8,128,576	6,617,276
Sept.	8,492,431	7,895,421	6,601,134
Oct.	8,417,694	7,421,620	6,852,809
Nov.	8,830,386	7,116,200	
Dec.	9,119,032	7,139,420	

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

	Bbls.
Gross stocks, Nov. 1	555,592.53
Runs from wells	435,820.24
Other receipts	21,337.65
Regular deliveries	278,352.62
Other deliveries	157,539.38

The amount of Illinois oil run by the Tide Water Pipe Co. in October was 22,491.64 bbls. Deliveries were 21,361.37 bbls. Adding these figures to those of the Illinois Pipe Line Co. makes the runs and deliveries as follows:

	Runs	Deliveries
1932—		
October	458,311.38	299,714.00
1932—		
January	500,177.12	246,634.10
February	482,561.50	186,010.30
March	565,538.70	270,617.75
April	461,920.92	285,817.98
May	521,384.64	279,859.83
June	501,878.26	263,702.70
July	466,635.89	284,537.18
August	476,096.53	307,325.89
September	436,529.00	329,994.39
October	332,680.67	353,620.34
November	346,880.27	338,351.22
December	336,072.57	317,749.63
1933—		
January	344,054.84	314,108.93
February	306,520.61	294,340.35
March	385,665.57	314,514.43
April	311,146.72	356,455.50
May	361,901.38	334,420.38
June	420,865.87	350,984.36
July	455,997.46	428,608.52
August	479,798.34	431,176.90
September	457,408.62	376,502.96

Tide Water Pipe Co., Ltd., also delivered in October, 135,460.50 bbls. of Oklahoma oil.

Average Daily Imports of Crude and Refined Oil at Principal United States Ports

Average barrels per day in 1932-33—	ATLANTIC PORTS: Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS: Galveston	New Orleans, Baton Rouge	Port Arthur, Sabine Pass	Tampa	Total	Total all ports
September	5,100	2,200	57,900	12,167	10,066	87,433	.....	.....	.....	.....	.....	87,433
October	14,023	.....	72,193	30,645	7,129	124,000	.....	.....	.....	.....	2,000	126,000
November	14,167	.....	49,967	19,233	8,900	92,267	.....	.....	.....	.....	2,133	94,400
December	14,258	2,065	84,323	28,162	9,256	138,064	.....	.....	.....	.....	5,226	143,290
January	7,644	4,355	64,194	25,710	6,613	108,516	.....	.....	.....	.....	548	109,064
February	7,682	4,789	120,490	12,619	10,822	156,393	.....	.....	.....	.....	2,357	158,750
March	7,710	4,290	101,258	36,292	16,000	165,290	.....	.....	.....	.....	.....	165,290
April	10,000	6,700	73,433	32,267	9,967	132,367	.....	.....	.....	.....	.....	132,367
May	4,258	2,194	62,484	22,548	3,355	94,839	.....	.....	.....	.....	4,355	99,194
June	4,833	.....	46,967	29,967	5,233	87,000	.....	.....	.....	.....	.....	87,000
July	10,645	2,452	91,258	33,161	2,968	140,484	.....	.....	.....	.....	6,194	146,678
August	13,774	2,452	112,193	33,484	6,742	168,645	.....	.....	.....	.....	2,161	170,806

Average Daily Receipts of California Crude and Refined Oil at Atlantic and Gulf Ports

Average barrels per day in 1932-33—	ATLANTIC PORTS: Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS: Galveston	New Orleans, Baton Rouge	Port Arthur, Sabine Pass	Tampa	Total	Total all ports
September	2,900	.....	5,000	11,633	7,967	27,500	.....	.....	.....	.....	.....	27,500
October	2,387	1,226	14,452	9,355	9,193	36,613	.....	.....	.....	.....	.....	36,613
November	4,667	.....	21,790	7,767	2,366	36,500	.....	.....	.....	.....	.....	36,500
December	4,129	.....	15,678	5,322	8,226	33,355	.....	.....	.....	.....	4,903	38,258
January	968	1,484	20,903	2,742	18,064	45,161	.....	.....	.....	.....	.....	45,161
February	9,106	1,643	14,250	10,965	11,500	47,464	.....	.....	.....	.....	2,643	50,107
March	5,065	.....	16,516	9,968	13,935	45,484	.....	.....	.....	.....	7,484	52,968
April	6,000	.....	14,500	7,733	4,934	33,167	.....	.....	.....	.....	4,900	38,067
May	4,194	.....	15,255	14,293	5,871	39,613	.....	.....	.....	.....	4,452	44,065
June	1,267	.....	5,300	11,767	7,667	26,000	.....	.....	.....	.....	4,938	30,938
July	3,773	.....	17,323	24,097	15,194	60,387	.....	.....	.....	.....	.....	60,387
August	2,484	1,742	12,065	16,032	7,129	38,452	.....	.....	.....	.....	.....	38,452

Gross Production of Crude Oil in the United States for 12 Months

(In barrels of 42 gallons)

1932-33—		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Rocky Mts.	Eastern	Total
October:	Month	14,627,663	11,915,811	27,213,332	2,892,486	1,019,931	1,963,063	2,254,444	3,814,000	65,701,230
	Daily average	471,860	384,381	877,656	93,306	32,901	63,325	72,724	123,033	2,119,394
November:	Month	14,142,389	11,340,930	26,155,652	2,841,782	1,020,600	1,962,943	2,169,885	3,573,000	63,210,979
	Daily average	471,413	378,031	871,855	94,726	34,020	65,431	72,323	119,167	2,107,066
December:	Month	14,595,028	11,637,171	23,487,813	2,777,879	1,037,539	1,966,481	2,067,855	3,894,000	61,263,771
	Daily average	470,807	375,393	757,672	89,609	33,469	63,435	66,705	119,161	1,976,251
January:	Month	14,460,282	13,550,784	26,115,932	2,871,282	993,457	2,021,117	2,241,610	3,112,000	64,366,464
	Daily average	466,461	404,864	842,449	92,622	32,047	65,197	72,310	100,387	2,076,338
February:	Month	13,107,043	12,579,992	25,092,383	2,801,512	880,208	1,793,443	2,096,612	2,747,000	61,089,193
	Daily average	468,109	448,964	896,156	100,054	31,436	64,051	74,879	98,011	2,181,757
March:	Month	13,414,930	15,455,236	24,242,444	3,604,539	943,702	2,070,695	2,371,469	3,118,000	75,221,865
	Daily average	432,741	498,556	1,104,595	116,276	30,442	66,797	76,499	100,581	2,426,486
April:	Month	14,262,943	11,720,010	27,306,582	3,492,990	909,120	2,156,736	2,209,470	3,017,000	65,074,851
	Daily average	475,431	390,667	910,219	116,433	30,304	71,891	73,649	100,567	2,169,162
May:	Month	14,817,633	13,521,540	49,151,776	3,277,103	928,667	2,116,296	2,294,558	3,177,000	89,284,613
	Daily average	477,988	436,180	1,585,541	105,712	29,957	68,268	74,018	102,161	2,880,149
June:	Month	14,344,654	14,339,070	29,907,737	3,210,150	901,770	2,009,321	2,239,550	3,057,000	80,009,862
	Daily average	478,155	477,969	1,330,258	107,035	30,059	66,974	74,655	101,900	2,666,995
July:	Month	15,140,828	15,250,795	27,623,069	4,068,130	991,008	2,137,667	2,477,148	3,474,000	84,432,645
	Daily average	488,414	597,445	1,213,647	131,230	31,968	68,957	79,908	112,065	2,723,634
August:	Month	15,590,941	18,763,122	37,596,147	3,908,294	924,234	2,292,881	2,494,630	3,850,000	85,276,148
	Daily average	501,158	605,262	1,209,876	126,074	29,814	73,964	80,472	124,194	2,750,844
September:	Month	14,673,846	16,743,510	33,416,220	3,729,000	1,083,300	2,112,456	2,472,480	3,890,000	78,126,512
	Daily average	489,128	558,117	1,113,874	124,300	36,110	70,415	82,416	129,667	2,604,327
Total 12 months		172,124,130	169,079,011	357,219,592	39,475,145	11,633,536	24,603,609	27,389,611	40,525,600	873,052,634

Michigan Fields

(Continued from Page 50)

Mount Pleasant average of 41 gravity.

Sun Oil Co.'s No. 1 William O. Fleming, NE SE NW Section 5-17n-8w, Evart Township, Osceola County, has reached about 1,000 feet. It is a new test between the Muskegon and Mount Pleasant Fields.

W. J. Wilson's No. 1 Beach, NE NE SW Section 17-12n-5w, Richland Township, Montcalm County, is having trouble around 700 feet.

A new Clare County wildcat was about ready to be started by McClanahan Oil Co., No. 1 David W. Frackleton, SE SE SE Section 18-18n-5w, Lincoln Township. The company also was starting No. 1 Stanley Demski, SE SE Section 28-15n-3w, Denver Township, Isabella County.

Five new tests, two in wildcat or semiwildcat territory and three in the proved field, were active in the Broomfield Township, Isabella County, gas area: J. E. Harding's No. 1 Todd, NE NE NE Section 2-14n-6w, drilling at 650 feet; D. F. Jones' No. 1 A. P. and Lillian Wonser, NW NE Section 2, drilling at 850 feet; Pure Oil Co.'s No. 1 Herman C. Lueder, C SE NE Section 10, lost the hole at 490 feet and was preparing to skid; Isabella Oil Development Co.'s No. 4 Keeler-Mitchell, NW SW Section 10, was driving pipe, and Pure's No. 5 Willie, moving in.

Kehlet and Flynn's No. 1 Branick, Section 9, Oregon Township, which had a show of 70 feet of oil in the Dundee limestone at 2,375 feet but struck bottom water after about 50 feet more of drilling, will be plugged back and treated as the possible discovery well of a new field in Lapeer County in Southeast Michigan.

Starting of Marion McCurdy's No. 1 Parson & Drake Realty Corp. test, C SE Section 36-3s-10e, Ecorse Township, Wayne County, in a real estate subdivision near Detroit, attracted considerable attention. The well is located near the Detroit, Wyandotte and Trenton salt dome said to be 40 miles long and 10 miles wide.

Hayden & Townsend's No. 1 Foy, Section 16, Richland Township, Saginaw County, was drilling below 2,600 feet and James J. Spillane's No. 1 Russell, Section 24, Jonesfield Township, same county, at about 1,000 feet.

The oldest test in Michigan, Ichenberg Brothers' No. 1 Grass Lake Ranch, Section 7-16n-11w, was ready to run casing at about 3,400 feet before drilling into the Dundee. It was started in 1928.

James Taggart's No. 4 test on the Robert Fish lease in Section 4, Austin Township, Mecosta County, three-fourths of a mile north of the State's record gasser recently completed on the Fish lease, lost the hole at about 650 feet and will skid.

Potential and Runs

Michigan's proration schedule was continued at 12 per cent of potential above the exemption of 100 bbls. per well despite the continually mounting potential which reached 2,654,170 bbls. for November when only 883,797 bbls. actually were produced. Based on this figure, Michigan averaged 29,459 bbls. a day, or about 500 bbls. less than the Federal allowable of 30,000 bbls. November production was about 500 bbls. a day under October runs which averaged 29,965 bbls. Daily potential jumped from 71,137 bbls. in October to 79,479 bbls. in November and to 117,277 bbls. at the beginning of December. It is estimated the daily potential now exceeds 130,000 bbls.

Michigan's monthly potential and actual runs for September, October and November, 1933, with the daily potential for December 1 as established November 22 was as follows:

Field—	Sept. potential	Sept. runs	Oct. potential	Oct. runs	Nov. potential	Nov. runs	Dec. potential
Porter	1,077,268	583,597	1,718,453	597,195	2,250,000	580,152	105,639
Yost	31,090	31,241	31,303	21,576	29,680	15,273	1,199
Greendale	142,890	121,686	143,220	124,755	140,000	115,911	3,863
Chippewa	69,330	61,698	67,631	60,826	65,000	57,035	1,901
Vernon	86,437	45,419	157,381	76,165	120,000	71,474	2,371
Leaton	23,310	21,341	24,397	18,439	18,000	14,653	488
Muskegon	20,093	16,883	20,791	18,316	18,900	15,526	630
Oceana	34,050	8,309	33,511	5,698	6,000	5,967	190
Saginaw	4,500	4,203	4,650	4,309	3,000	2,700	139
Ogemaw	3,600	1,666	3,720	1,526	3,500	3,407	854
Cass	90	90	90	90	90	90	3
Total	1,491,651	895,133	2,205,248	928,915	2,654,179	883,797	*117,277
Dly. av.	49,722	29,838	71,137	29,965	88,390	29,459	.....

*Daily as of November 22.
Compiled by State Umpire O. H. White.

Eastern Fields

(Continued from Page 51)

Township, Washington County, E. H. and J. B. Tague completed No. 8 on the Adaline D. McKennan estate in the Dunkard sand at 1,010 feet and it is showing for a 10-bbl. well. Six of these eight wells were fair producers.

In Amwell Township, Washington County, Carnegie Natural Gas Co. completed a test on the Fred Baumberger farm and has a fair gas well. It was completed at a depth of 1,800 feet, the Salt sand, and is showing for 829,000 feet a day. The Pittsburgh Coal was at 850 feet; the top of the Salt sand at 1,790 feet. Gas was struck at 1,796 feet, and after four feet more, the well was shut down and the gas turned into the line for test. In this district, the same company is spudding on the John C. Murphy farm and has started drilling on the C. W. Dunn farm. Here, the Wise Oil & Gas Co. has started drilling on the Roach farm, east of the fair gas well on the Lucy Craft farm.

In East Findley Township, Washington County, Myers, Hoskinson and others completed their test on the J. N. Clutter farm in the Big Injun sand at a total depth of 1,725 feet. It is showing for 1,500,000 feet a day. The top of the Injun sand was at 1,703 feet; gas was struck at 1,710 feet and continued to 1,720 feet. At 1,725 feet there was a showing of oil.

In Somerset Township, Washington County, Ellwood Oil & Gas Co. has reached 2,713 feet on the Lee Mansfield farm.

In Greene County, Union Gasoline & Oil Co. is down 1,650 feet on the Floyd Lynch farm in Dunkard Township. In this township, Convex Glass Co. has started drilling on the G. C. Ross farm. In Richhill Township, Richhill Oil & Gas Co. is down 750 feet on the P. W. Gribbin farm. John Lantz has reached 1,080 feet on his own property in Greene Township.

In Fayette County, Carnegie Natural Gas Co. completed its test on the C. B. Wilkey farm in Jefferson Township. It was drilled to a depth of 3,104 feet and found gas in the Sweet Richard sand that gauged about 160,000 feet a day. The top of the sand was at 3,096 feet with gas showing at 3,098 feet. The Sweet Richard sand is below the Elizabeth sand and is considered a stray from that formation group.

California Fields

(Continued from Page 49)

Oil & Gas Co. to encounter the pay in its No. 2 on state tideland permit No. 98. This well may have deviated somewhat from the vertical and may not be a true index of subsurface conditions. General Petroleum is rigging up equipment in No. 7 Erburu in the Capitan Field of Santa Barbara County preparatory to pulling the liner and replugging the hole, bottomed at 1,463 feet. Upon conclusion of this work the crew will be transferred to No. 9 Erburu, a new well.

Chanslor-Canfield Midway Oil Co. recovered the tubing in No. 2-A Hobson in the San Miguelito Field a few days ago and is cleaning out the hole at 6,200 feet. This well, the first producer finished in the San Miguelito Field, was finished late last year pumping approximated 100 bbls. per day after the hole had been plugged back from 10,030 feet to 7,825 feet. In the Ventura Avenue district, General Petroleum Corp. has located water in No. 15-A Barnard at 8,450 feet and at 8,720-30 feet. Both these points are below the shoe of the 6⅝-inch water string landed at 7,966 feet. The location of water in this well is of primary importance beceause if a secondard water string is landed below 8,730 feet the company stands an excellent chance of completing this well as a good producer. General Petroleum's No. 15-A Barnard was originally brought in flowing 8750 bbls. daily from 9,000 feet, but showed a water cut cubstantially in excess of pipe line requirements. The hole has been plugged back by stages to 8,950 feet without any material reduction in the water cut. This well looked exceptionally promising in the deep 57 zone and may ultimately be completed if the tests prove to be conclusive as far as water is concerned. Associated is expected to complete two new wells in the Ventura Avenue Field before the close of the year and Shell will probably list No. 77 Taylor for completion shortly thereafter.

NEW IMPERIAL OFFICES

EDMONTON, Alberta, Dec. 16.—Imperial Oil, Ltd., recently opened its new Edmonton office building at 102nd Street and Victoria Avenue. F. T. Norris is manager of the Edmonton division of the company.

Wildcat Operations in Gulf Coast

(Continued from Page 46)

Texas Gulf Prod. Co.'s No. 3 Wilburn, 50 ft. out of the upper SE cor. of lease, Wm. Hodges Sur. ..... Drlg. salt 2,449 ft.
Texas Co.'s No. 6 Wilburn (W.O.), Henry Griffith League, 250 ft. W of No. 4, 50 ft. S line of lease.. Drlg. shale 4,930 ft.
Yount Lee Oil Co.'s No. 21 Chambers County (W.O.), Wm. Bloodgood Sur. ..... Cutting and pulling screen 5,318 ft.

BIG CREEK—FORT BEND COUNTY

Gulf Stream, Inc.'s No. 1 A. H. Theis, 236 ft. E of old No. 4 A. H. Theis in line, Mitchell Young Sur. .... Standing 2,846 ft.
McPhail et al's No. 1 Wheat ..... Abd. 2,458 ft.

ORCHARD—FORT BEND COUNTY

Gulf Prod. Co.'s No. 38 Moore, James Frazier Sur., 380 ft. E, 100 ft. S of No. 31 ..... Derrick.

RABBS RIDGE—FORT BEND COUNTY

Gulf Prod. Co.'s No. 3 Hammerstram, Samuel Kennedy Sur. ..... Drlg. shale 3,111 ft.
Humble O. & R. Co.'s No. 9 M. Gubbles, Sam Kennedy Sur., 814 ft. SE of No. 7 ..... T.D. 5,336 ft.; killed blowout.
Humble O. & R. Co.'s No. 18-B Lockwood & Sharp..... Drlg. shale 5,271 ft.
Humble O. & R. Co.'s No. 25-A Lockwood & Sharp, John Rabb Sur., 2,872 ft. W of E line, 379 ft. S of N line of survey ..... Sand 5,361 ft.
Humble O. & R. Co.'s No. 2 Walters, R. Peebles Sur., 300 ft. from N and E lines of lease ..... Drlg. shale 4,090 ft.
West-Len Oil Co.'s No. 1 Mulahill, 300 ft. N of S line, 300 ft. W of E line ..... No report.

HIGH ISLAND—GALVESTON COUNTY

Yount Lee Oil Co.'s No. 2 Broussard-Orme, Martin Dunman Sur., 300 ft. S of No. 1-B Cade ..... Drlg. shale 4,915 ft.
Yount Lee Oil Co.'s No. 2-B Cade, 170 ft. from N line, 100 ft. from E line of 40-ac. lease, N. Fitzsimmons Sur. ..... Derrick.
Yount Lee Oil Co.'s No. 38 Cade, 600 ft. NW of No. 1-B Cade, 755 ft. from No. 1 Smith, N. Fitzsimmons Sur. ..... Drlg. shale 5,026 ft.
Yount Lee Oil Co.'s No. 37 Cade, N. Fitzsimmons Sur., 600 ft. S of No. 36 ..... Drlg. shale 5,635 ft.
Yount Lee Oil Co.'s No. 19 Smith, Martin Dunman Sur., 150 ft. N at R/A from center of line between 14 and 15 ..... Drlg. shale 5,125 ft.
Yount Lee Oil Co.'s No. 20 Smith, 1,210 ft. from W line, 1,790 ft. from N line of 200-ac. tract, Dunman Sur. ..... Rigging.

ARRIOLA—HARDIN COUNTY

Republic-Houston Oil Co.'s No. 6 Arriola fee, 2,150 ft. S of N line, 5,050 ft. E of W line of lease, Arriola Sur. ..... Drlg. shale 3,415 ft.

BATSON—HARDIN COUNTY

W. G. Christian's No. 1 Buchanan, J. Milhone Sur., 1,300 ft. W of E line, 50 ft. N of S line, Strip 17.... Fishing 2,106 ft.
Danciger O. & R. Co.'s No. 3 Hooks, W. Donoho Sur., 330 ft. E of CWL, Blk. 24 ..... Drlg. heaving shale 4,333 ft.

SARATOGA—HARDIN COUNTY

Rio Bravo Oil Co.'s No. 104 Jordit fee, 50 ft. N of No. 94. Drlg. gumbo 910 ft.
Selamo Oil Co.'s No. 1 Casewell, 940 ft. S of NW cor. and 600 ft. from E line, H.B.B.&C. Sur. ..... Drlg. sand 2,662 ft.

SOUR LAKE—HARDIN COUNTY

Arils Pet. Co.'s No. 1 Sour Lake Bank, H.&T.C. Sur., NW cor. Blk. 11, Sec. 69 ..... T.D. 2,050 ft.; standing.

GOOSE CREEK—HARRIS COUNTY

McPhail & Atkins' No. 1 Harral, Wm. Scott League, 600 ft. W and N from Humble's No. 1 Harral..... Rigging.
Smith-Faust's No. 1 Washington-Texas Prod. Co., Wm. Scott Sur., 200 ft. W of E line, 75 ft. S of N line, 2 acres ..... T.D. 2,065 ft.; cmtd. csg.

HUMBLE—HARRIS COUNTY

Texas Co.'s No. 27 House, M. O. Owens Sur., 430 ft. NW of No. 8 ..... Drlg. shale and sand 2,590 ft.
Wilson Pet. Co.'s No. 1 Cicero (W.O.) ..... Comp. 100 bbls. per day; 3,889 ft.

MYKAWA—HARRIS COUNTY

Crown-Framer Oil Co.'s No. 3 Minnetex, 100 ft. N line, 100 ft. E line, of W½ Blk. 251, Wm. Lovett Sur. (W.O.) ..... Abd. 4,378 ft.

PIERCE JUNCTION—HARRIS COUNTY

Cogswell et al's No. 1 Herman est. (W.O.) ..... Standing 4,825 ft.
Harrison & Abercrombie's No. 4 Ridder, J. Hamilton Sur., 50 ft. W of No. 3 ..... Drlg. gumbo 1,179 ft.
Rio Bravo Oil Co.'s No. 25-A Settegast, 625 ft. W, 525 ft. N of SE cor. A Lease, J. Kopman Sur. (W.O.)... Drlg. sand 4,679 ft.

TOMBALL—HARRIS COUNTY

Amerada Pet. Corp.'s No. 1 Bode, J. Hooper Sur., 686 ft. from E and W lines, 320 ft. from S line of lease. Drlg. shale 5,388 ft.
Amerada Pet. Corp.'s No. 1 Nelson, 466 ft. from S line, 410 ft. from W line, Joseph House Sur. ..... Drlg. shale 3,900 ft.
Amerada Pet. Corp.'s No. 1 Otto-Rudel, J. House Sur., 318 ft. from N line, 466 ft. from E line ..... Drlg. shale 1,100 ft.
Amerada Pet. Corp.'s No. 2 Otto Rudel, 466 ft. from N line, 500 ft. from W line of tract, J. House Sur.. Rigging.
Humble O. & R. Co.'s No. 1 Kuehn, 1,399 ft. out of the SW cor. W. Usener Sur., 300-ac. tract ..... Comp. 27 bbls. per hour; ¼-in. choke, 5,553 ft.
Humble O. & R. Co.'s No. 1 Moody, 466 ft. E. 466 ft. S of NW cor. 100-ac. tract, J. H. Edwards Sur. .... Derrick.
Humble O. & R. Co.'s No. 2 Quilter, A. Senechal Sur., 933 ft. E of No. 1 and 466 ft. from E line ..... Rigging.
Humble O. & R. Co.'s No. 1 W. Theis, J. H. Edwards Sur., 1,399 ft. N line, 466 ft. W line of lease ..... Drlg. shale 3,780 ft.
Humble O. & R. Co.'s No. 1 Treichel, 466 ft. from SW cor. 109-ac. tract, C. Goodrich Sur. ..... Drlg. shale 4,326 ft.
Texas Co.'s No. 1 E. Hillequist, 515 ft. W, 466 ft. N of SE cor. of 100-ac. tract, Joseph House Sur. ..... Drlg. shale 4,832 ft.
Texas Co.'s No. 1 O. Hillequist, 466 ft. N of S line, 400 ft. W of E line of lease, Joseph House Sur. .... Drlg. shale 5,288 ft.

Stanolind O. & G. Co.'s No. 3 Theis, J. H. Edwards Sur., 466 ft. N, 404 ft. W of SE cor. of lease.....Drlg. shale 4,350 ft.
Windsor Oil Co.'s No. 1 Petrick, J. H. Edwards Sur., 467 ft. from N and E lines of tract .....Derrick.

FANNETT—JEFFERSON COUNTY

Gulf Prod. Co.'s No. 14 Thomas, 951 ft. W, 100 ft. N of SE cor. of 446-ac. tract, Wm. Smith Sur. .....Set screen 3,654 ft.

ESPERSON—LIBERTY COUNTY

Cranfill-Reynolds Co.'s No. 7 Davis (W.O.), Duncan Sur...T.D. 7,510 ft.; D.S. stuck; fishing.

HULL—LIBERTY COUNTY

Gulf Prod. Co.'s No. 1 Briggs, 50 ft. each way from NE cor. of lease, J. Devore Sur. .....Spudding.
Gulf Prod. Co.'s No. 94 Phoenix, 50 ft. each way from most westerly SW cor. J. Devore Sur. .....Drlg. shale 2,310 ft.
Hannah Oil Co.'s No. 1 Hannah, J. Devore Sur. (W.O.)..Derrick.
Hannah Oil Co.'s No. 2 Hannah, J. Devore Sur. .....Derrick.
Humble O. & R. Co.'s No. 30 Hooks-Guedry, J. Devore Sur., 287 ft. S, 40 ft. E of lease .....Drlg. shale 4,450 ft.
Humble O. & R. Co.'s No. 32 Hooks-Guedry, J. Devore Sur., 92 ft. W of No. 29 .....Drlg. shale 4,730 ft.
Liberty-Hull Oil Co.'s No. 2 Mecom fee .....Drlg. shale 3,930 ft.
Miramar Oil Corp.'s No. 6-A Phoenix, Jesse Devore Sur..Drlg. shale 4,197 ft.
Miramar Oil Corp.'s No. 2-B Phoenix .....Drlg. shale 4,250 ft.
Sun Oil Co.'s No. 1 Carr, 50 ft. each way out of NE cor. of 60-ac. tract, J. Devore Sur. .....Comp. 52 bbls. per hour; ½-in. choke, 4,778 ft.
Sun Oil Co.'s No. 2-A Carr, 197 ft. W of No. 1, Jesse Devore Sur. .....Moving in material.
Texas Co.'s No. 5 Barrow fee, J. Devore Sur., 533 ft. S, 150 ft. W of NE cor. of lease .....Drlg. gumbo 1,902 ft.
Yount Lee Oil Co.'s No. 4 Hooks-Sterling, J. Devore Sur., 150 ft. S of N line, 535 ft. W of E line of lease..Drlg. shale 3,996 ft.

LIBERTY FIELD—LIBERTY COUNTY

Ross Oil Co.'s No. 1 Richardson, M. G. White Sur., 120 ft. E of Gulf-Humble's No. 1 Carter .....Derrick.

CONROE—MONTGOMERY COUNTY

Alpha Pet. Co.'s No. 2 Crowe, S. H. Bryan Sur. .....Rigging.
Alpha Pet. Co.'s No. 1 Hensley.....Sand 5,100 ft.
Alpha Pet. Co.'s No. 3-B Krohn, Stephen Bryan Sur. ..Rig.
Feltex Oil Co.'s No. 2 Kirby-Bertrand, G. W. Wages Sur., 225 ft. from N and E lines of lease.....Drlg. shale 3,852 ft.
Gulf Coast Drlg. & Prod. Co.'s No. 2 J. L. Hensley, A. Steele Sur., 466 ft. S line in center E and W of strip .....Derrick.
Gulf Coast Drlg. & Prod. Co.'s No. 12 Keystone Mills, A. James Sur., 467 ft. W line, 932 ft. S of No. 11..Derrick.
Gulf Coast Drlg. & Prod. Co.'s No. 14-A Keystone Mills, A. James Sur., 840 ft. W of No. 3 .....Rig.
Gulf Coast Drlg. & Prod. Co.'s No. 15-A Keystone Mills, A. James Sur., 850 ft. W of No. 14 .....Derrick.
Gulf Coast Drlg. & Prod. Co.'s No. 16-A Keystone Mills, A. James Sur., 850 ft. W of No. 15 .....Drlg. shale 1,280 ft.
Gulf Coast Drlg. & Prod. Co.'s No. 19-A Keystone Mills, A. S. James Sur. .....Derrick.
Gulf Coast Drlg. & Prod. Co.'s No. 28-A Keystone Mills, A. S. James Sur. .....Drlg. shale 2,946 ft.
Gulf Oil & Sulphur Co.'s No. 3 Springfield, J. S. Springfield Sur., 466 ft. from SW line, 100-ac. lease .....Derrick.
Harrison & Abercrombie's No. 1-A Lois McShane, 226 ft. from E and N lines of Sec. 5, T.&N.O. Sur. ....Drlg. shale 4,310 ft.
Hooper & Rutherford's No. 6 Hooper, L&G.N. Sur., half way between 1 and 2 .....Shale 5,114 ft.
Humble O. & R. Co.'s No. 1-F Alexander (relief well)..Drlg. shale 4,036 ft.
Humble O. & R. Co.'s No. 8 A. Cartright .....Comp. 82 bbls. per hour; ½-in. choke, 5,169 ft.
Humble O. & R. Co.'s No. 13-A Cartwright, J. A. Davis Sur. .....Rigging.
Humble O. & R. Co.'s No. 1 American Natl. Bank ....Drlg. rock 3,275 ft.
Humble O. & R. Co.'s No. 1 Dodson & Williams.....Shale 5,159 ft.; cmtd. csg.
Humble O. & R. Co.'s No. 21 Madeley .....Sand 5,151 ft.; cmtd. csg.
Humble O. & R. Co.'s No. 27 Madeley, Ransom House Sur. .....Comp. 77 bbls. per hour; ½-in. choke, 5,149 ft.
Humble O. & R. Co.'s No. 17 Moore .....Drlg. shale 5,010 ft.
Humble O. & R. Co.'s No. 19 Moore .....Comp. 79 bbls. per hour; ½-in. choke, 5,127 ft.
Humble O. & R. Co.'s No. 44 Moore, Lemuel Smith Sur...Drlg. shale 270 ft.
Humble O. & R. Co.'s No. 39-A South Tex. Dev. Co., T. Slade Sur. .....Drlg. shale 3,000 ft.
Humble O. & R. Co.'s No. 56-A South Tex. Dev. Co., T. Slade Sur. .....Drlg. shale 5,030 ft.
Humble O. & R. Co.'s No. 4-C South Tex. Dev. Co. ....Drlg. shale 2,860 ft.
Humble O. & R. Co.'s No. 4-D South Tex. Dev. Co., T.&N.O. Sur. .....Shale 5,126 ft.; cmtd. csg.
Humble O. & R. Co.'s No. 1-F South Tex. Dev. Co., T.&N.O. Sur. .....Comp. 87 bbls. per hour; ½-in. choke, 5,149 ft.
Pine Tree Oil Co.'s No. 1 South Tex. Dev. Co., T.&N. O. Sur. No. 13, 1,600 ft. W line, 810 ft. S line of Sur...Standing 2,510 ft.
Southern Liberty Oil Co.'s No. 1 Harris, J. A. Davis Sur., 738 ft. from W line, 330 ft. from S line .....Standing 3,545 ft.
Strake Pet., Inc.'s No. 2 Hammond .....Abd. 5,186 ft.
Strake Pet., Inc.'s No. 4 Krohn, S. H. Bryan Sur., 712 ft. W of No. 1 .....Shale 5,136 ft.; cmtd. csg.
Strake Pet., Inc.'s No. 5 Krohn, S. H. Bryan Sur., 717 ft. W of No. 2 .....Drlg. shale 960 ft.
Sun Oil Co.'s No. 24 Foster, 2,240 ft. SW of NE line, 2,046 ft. SE of NW line, J. Bricker Sur. ..... Shale 5,136 ft.; cmtd. csg.
Sun Oil Co.'s No. 32 Foster .....Derrick.
Sun Oil Co.'s No. 4 Keystone Mills, A. Steele Sur., 1,-048 ft. S of No. 3 .....Comp. 96 bbls. per hour; ½-in. choke, 5,130 ft.
Sun Oil Co.'s No. 10 Keystone Mills, A. Steele Sur. ....Derrick.
Sun Oil Co.'s No. 3 McDonald, W. Strickland Sur., 250 ft. N, 840 ft. E of No. 1 .....Drlg. shale 1,311 ft.
Tide Water Oil Co.'s No. 2 American Natl. Bank, W. Strickland Sur., 250 ft. N, 200 ft. E line of lease...Spudding.
Tide Water Oil Co.'s No. 8 Krohn, 330 ft. from S and E lines, S. H. Bryan Sur. .....Derrick.
Tide Water Oil Co.'s No. 30 Lewis, C. B. Stewart Sur., 1,973 ft. E, 1,493 ft. S line of lease .....Drlg. 1,770 ft.
Tide Water Oil Co.'s No. 31 Lewis, C. B. Stewart Sur., 3,029 ft. N, 1,932 ft. E line of lease .....Drlg. 2,930 ft.

ORANGE—ORANGE COUNTY

Gulf Prod. Co.'s No. 12 Hager-Moore (W.O.) .....Drlg. shale 5,712 ft.

PORT NECHES—ORANGE COUNTY

Texas Co.'s No. 2-B Polk, 695 ft. N, 150 ft. S of NE cor. of N. Jacob Beaumont Sur. .....Drlg. shale 3,209 ft.
Texas Co.'s No. 4 Kuhn, 150 ft. E, 150 ft. N of NW cor. of lease .....Drlg. sticky shale 4,651 ft.
Texas Co.'s No. 5 Kuhn, 693 ft. from E line, 150 ft. from N line of SE cor. of lease, M. Hall No. 2, T. J. Notgrass Sur. .....Drlg. shale 2,980 ft.

LIVINGSTON—POLK COUNTY

Vick Borsodi et al's No. 1 West, E 3½ acres of 35 acres, Roberts tract A. Viesca Sur. .....T.D. 4,370 ft.; P.B. to 4,356 ft.
Gist Oil Co.'s No. 1 Kingsbury County Holding Corp., A. Viesca Sur., 150 ft. N at R/A and 193 ft. E along S line of tract .....Drlg. shale 3,221 ft.
Harrison & Abercrombie's No. 2 Carter, 466 ft. S and W of NW cor. Shell 80-ac. Jones lease .....Rigging.
Humble O. & R. Co.'s No. 3 Grandbury, 6,000 ft. W of No. 1, A. Viesca Sur. .....Abd. 5,337 ft.
Humble O. & R. Co.'s No. 4 Grandbury, M. C. Swinney Sur., 550 ft. from NE, 389 ft. from SE R/A out of NW cor. of lease .....Comp. 26 bbls. per hr.; 5/16-in. choke, 4,340 ft.
Humble O. & R. Co.'s No. 6 Grandbury, 1,079 ft. N and E of No. 7, A. Viesca Sur. .....Drlg. shale 500 ft.
Humble O. & R. Co.'s No. 7 Grandbury, 540 ft. NE, 404 ft. NW at R/A from NW cor. R. H. Jones (110-ac.) .....Derrick.
Humble O. & R. Co.'s No. 8 Grandbury, 466 ft. from NE line, 466 ft. from NW line, Sec. 14, A. Viesca Sur. .....Derrick.
Shell Pet. Corp.'s No. 1 J. Duff, 438 ft. NW, 33 ft. NE lines of lease, A. Viesca Sur. .....Drlg. shale 4,566 ft.
Shell Pet. Corp.'s No. 1 Jones, 535 ft. from E line, 1,248 ft. from S line of A. Jones lease, A. Viesca Sur. .....Drlg. shale 4,374 ft.
Shell Pet. Corp.'s No. 1 Munson, 305 ft. S line, 779 ft. from E and W lines of Munson 50-ac. tract .....T.D. 4,337 ft.; comp. 26 bbls. per hr.; ⅝-in. choke.

GRETA—REFUGIO COUNTY

Atlantic Oil Prod. Co.'s No. 4-A O'Brien, 466 ft. S line, 933 ft. E of No. 2, M. J. Ximines Sur. .....Drlg. shale 710 ft.
Atlantic Oil Prod. Co.'s No. 2-B J. J. O'Brien, 466 ft. each way from SE cor. of 50-ac. lease, N. S. Crunk Sur. .....Derrick.
Atlantic Oil Prod. Co.'s No. 2-J O'Brien, 466 ft. from SE cor. J. H. Peoples Sur. .....Rigging.
Atlantic-Alamo's No. 1-F J. M. O'Brien .....Drlg. sand 4,395 ft.
Atlantic-Alamo's No. 2-F J. M. O'Brien, 466 ft. from S and W lines of lease, M. J. Ximines Sur. .....Drlg. shale 3,780 ft.
Atlantic Oil Prod. Co.'s No. 2 Heard, 933 ft. E of No. 1, center N and S, J. H. Peoples Sur. .....Rigging.
Circle W Oil Co.'s No. 6 O'Brien, 398 ft. N, 466 ft. E lines of lease, E. H. Winfield Sur. .....Drlg. 635 ft.
Circle W Oil Co.'s No. 10 O'Brien, 1,007 ft. N of No. 9..Drlg. sand 4,395 ft.
Dash Prod. Co.'s No. 2-E O'Brien, N. S. Crunk Sur., 466 ft. N of SE line, center E and W of tract ....Derrick.
Floboots Oil Corp.'s No. 1 M. C. Bauer, 330 ft. N line, 1,734 ft. from W line, J. M. Ximines Sur. .....Drlg. shale 272 ft.
Floboots Oil Corp.'s No. 1 J. J. O'Brien, 466 ft. S of N line, 466 ft. E line, 50-ac. tract, N. S. Crunk Sur...T.D. 4,395 ft.; cmtd. csg.
Hewitt & Daugherty's No. 2 M. F. Lambert, 2,530 ft. E of NW cor., Harper Sur., 466 ft. S in Hardwick Sur. .....Comp. 125 bbls. per day; ¾-in. choke, 4,391 ft.
Humble O. & R. Co.'s No. 2 Heard, 466 ft. S of most southerly N line, 393 ft. E of most westerly line, N. S. Crunk Sur. .....Drlg. shale 1,840 ft.
Humble O. & R. Co.'s No. 1 J. E. B. Heard, 466 ft. from SW cor. 500-ac. tract, J. H. Peoples Sur. .....Derrick.
Humble O. & R. Co.'s No. 1 Wilder, 466 ft. S line, 313 ft. E line, J. T. McGrew Sur. .....Derrick.
Edwin Jones' No. 4-A O'Brien, 466 ft. N of S line, 466 ft. E of W line of 327-ac. tract, N. S. Crunk Sur. ..Drlg. shale 4,230 ft.
Edwin M. Jones' No. 8-A O'Brien, N. S. Crunk Sur., 466 ft. W of E line, 1,629 ft. N of S line of lease..Derrick.
Edwin Jones' No. 9-A O'Brien, 466 ft. out NE cor. of lease, N. S. Crunk Sur. .....Drlg. shale 4,280 ft.
Neural Oil Co.'s No. 1 Ira Heard, M. J. Ximines Sur., 330 ft. out of NW cor. of 25-ac. tract .....T.D. 5,987 ft.; P.B. to 5,929-40 ft.
Neural Oil Co.'s No. 1 V. E. Heard, 466 ft. N line, 266 ft. W line, M. J. Ximines Sur. .....Sand 5,998-6,006 ft.; cmtd. 7-in. csg. 5,995 ft.
Neural Oil Co.'s No. 3 W. Heard, 710 ft. W line, 1,510 ft. N line of lease, M. J. Ximines Sur. .....Derrick.
Neural Oil Co.'s No. 3 O'Conner, 466 ft. from E line, 466 ft. from S line, N. S. Crunk Sur. .....Drlg. shale 4,374 ft.
Southwest Oil Corp.'s No. 4-B O'Brien, N. S. Crunk Sur., 466 ft. N of S, 466 ft. E of W line of lease..Derrick.
Southwest Oil Corp.'s No. 1 Thos O'Conner, N. S. Crunk Sur., 466 ft. from N line, 466 ft. from W line of lease .....Comp. 320 bbls.; ¼-in. choke, 4,-392 ft.
Standard of Kansas' No. 1 O'Conner, 466 ft. from N line, center E and W of lease, N. S. Crunk Sur. ..Drlg. shale 4,050 ft.
Stanolind-Atkins' No. 1 Welder, 466 ft. S line, 313 ft. W line of 300-ac. tract, J. T. McGrew Sur. .....Sand 4,379-99 ft.; cmtd. 7-in. csg. 4,379 ft.
Texas Gulf Prod. Co.'s No. 3-A J. M. O'Brien, 1,988 ft. W of E line, 466 ft. S at R/A, J. H. Peoples Sur. ..Derrick.
Texas Gulf Prod. Co.'s No. 1 J. M. O'Brien, J. H. Winfield Sur., 466 ft. N-S line, center E and W, Blk. 12..Moving in material.
Trinity Drillers' No. 1 Welder, J. T. McGrew Sur., 466 ft. from S and W lines, J. F. Welder 300-ac. tract..Drlg. shale 4,030 ft.
United Prod. Co.'s No. 10 Fox, 894 ft. NE of No. 9, Hews & Brown Sur. .....Sand 4,402 ft.; comp. 437 bbls. 12 hrs.; ¾-in. choke.
United Prod. Co.'s No. 11 Fox, 867 ft. NE of No. 10, Hews & Brown Sur. .....T.D. 4,395 ft.; reaming to set csg.
United Prod. Co.'s No. 5 Lambert, 700 ft. W, 600 ft. S from NE cor. of lease, E. W. Harper Sur. .....Sand 3,486-3,501 ft.; pumping 250 bbls.

CLAY CREEK—WASHINGTON COUNTY

M. O. N. T. Oil Co.'s No. 1 Giddings .....Drlg. shale 3,000 ft.
Sun Oil Co.'s No. 9 Janner, J. F. Perry Sur., 1,126 ft. NE of No. 5 .....Drlg. sand 1,169 ft.
Sun Oil Co.'s No. 3 Schermer, N. Clay Sur., 330 ft. NW, 330 ft. SW line of lease .....Spudding.

SOUTH LOUISIANA FIELDS

ACADIA PARISH

Mills Bennett Prod. Co.'s No. 1 Riverside, 1,400 ft. S, 467 ft. E of NW cor. Sec. 61-9s-2w .....Drlg. shale 1,205 ft.
Superior Oil Co.'s No. 1 P. O. Hermandez, 990 ft. W, 990 ft. S of NE cor. SE Sec. 34-8s-3e .....Drlg. shale 1,535 ft.
I. M. Pharris' No. 1 Link Bros., 150 ft. S, 150 ft. E, NW cor. Sec. 36-7s-1e .....Gumbo 475 ft.; standing.

CAMERON PARISH

Southern Sulphur Co.'s No. 1 Gulf of Mexico, 330 ft. S, 338 ft. E of SW cor. Sec. 29-15s-10w .....T.D. 3,275 ft.; standing.
Texas Co.'s No. 9 State, Calcasieu Lake, 16,055 ft. W, 2,270 ft. N, NE cor. Sec. 1-14s-9w .....Drlg. shale 2,784 ft.

CALCASIEU PARISH

Gulf Ref. Co.'s No. 1 Sweet Lake Oil Co., 660 ft. N, 330 ft. E of SW cor. Sec. 29-10s-5w .....Drlg. shale 6,396 ft.
Fred Oil Co.'s No. 1 Farszt, 566 ft. N, 300 ft. W, SE cor. NW SE Sec. 26-8s-10w .....Drlg. shale 678 ft.
Union Sulphur Co.'s No. 1 Barbe, 2,661 ft. W, 2,647 ft. S of NE cor. Sec. 1-9s-8w .....P.B. to 4,247 ft.; drlg. new hole 4,676 ft.

EAST BATON ROUGE PARISH

British-American Oil Co.'s No. 1 Louisiana, 2,750 ft. NE NW cor. Sec. 79, and 1,700 ft. N of NE Sec. 79, in Sec. 6-8s-1e .....Abd. 6,515 ft.

EVANGELINE PARISH

J. E. Ledau's No. 3 Vidrine, 30 ft. S of No. 2, Sec. 47-3s-2e .....Drlg. shale 345 ft.

JEFFERSON DAVIS PARISH

Humble O. & R. Co.'s No. 2 Devilbiss, 1,850 ft. S, 250 ft. W of NE cor. Sec. 14-9s-4w .....Set screen 3,242 ft.
Shell Pet. Corp.'s No. 1 Kratzs, 660 ft. S, 330 ft. W of NE cor. NW Sec. 12-9s-4w .....Drlg. shale 3,039 ft.

LAFOURCHE PARISH

Barnsdall Oil Co.'s No. 1 Harang, Lot 6, Twp. 17s-20e...T.D. 6,638 ft.; P.B. to 6,612 ft.

IBERIA PARISH

Gross Tete Dev. Co.'s No. 1 Angelloz .....Standing 1,500 ft.

PLAQUEMINES PARISH

Southern Sulphur Co.'s No. 1 Bay Adams .....Rigging.

ST. BERNARD PARISH

Southern Sulphur Co.'s No. 1 Lake Lery, 400 ft. W, 500 ft. N, SW cor. Sec. 28-13s-15e .....Cmtd. csg. 212 ft.
Southern Sulphur Co.'s No. 1 State Lake Bargne, 350 ft. N, 330 ft. E, SE cor. Sec. 33-13s-15e .....Cmtd. csg. 650 ft.

ST. LANDRY PARISH

Gaunch Synd.'s No. 1 Lewis, 300 ft. N and E of SW cor. NW NE Sec. 29-5s-6e .....Standing; T.D. 3,450 ft.
H. H. Hotchins Lbr. Co.'s No. 1 Whiteman Lbr. Co., 350 ft. out of SW cor. NE Sec. 15-5s-6e .....Drlg. shale 1,200 ft.

ST. MARTIN PARISH

Standard Oil Co. of Kansas' No. 1 E. B. Hopkins, Sec. 33-10s-6e ..... Drlg. shale 6,257 ft.

TERREBONNE PARISH

Texas Co.'s No. 9 State-Dog Lake ..... Drlg. shale 5,445 ft.
Texas Co.'s No. 10 State-Caillou Island ..... Drlg. sand 1,025 ft.
Texas Co.'s No. 2 School Board-Bay St. Elaine ..... Drlg. shale 4,964 ft.
Texas Co.'s No. 2 State-Four Isle ..... Drlg. shale 2,837 ft.
Texas Co.'s No. 1 State Bay-St. Elaine, 2,000 ft. N, 2,200 ft. E of SW cor. Sec. 5-22s-13e ..... Moving in.
Texas Co.'s No. 10 State-Lake Pelto, 420 ft. N, 1,246 ft. E, SW cor. Sec. 4-22s-18e ..... Drlg. shale 3,174 ft.

VERMILLION PARISH

Hammill & Smith's No. 1 Faulk, 600 ft. S, 400 ft. E of NW cor. Sec. 5-12s-3e ..... Drlg. gumbo 2,857 ft.

VERNON PARISH

Glen J. Smith's No. 1 Fullerton Mineral Co., 330 ft. N and E, SW cor. Sec. 32-1n-5w ..... Abd. 5,340 ft.

TEXAS

MISCELLANEOUS WILDCATS

AUSTIN COUNTY

Tibbetts et al's No. 1 Heideman, 4,320 ft. W along N line from NE cor. of A. Larson Sur. in J. Cooper Sur., thence 416 ft. N at R/A ..... Drlg. shale 759 ft.
R. R. Mitchell's No. 1 H. Schlerda, J. F. Fitzgibbons Sur., 300 ft. out NE cor. 96-ac. tract ..... Moving in material.

BRAZORIA COUNTY

Barnsdall Oil Co. and Superior Oil Co. of Calif.'s No. 1 McCain, W. C. D. Hall Sur., 1,116 ft. N, 330 ft. E of SW cor. of Lot 65 ..... Drlg. shale 6,657 ft.
Danciger O. & R. Co.'s No. 1 L. Williams, 700 ft. NE line, 726 ft. SE line of 150-ac. tract, W. C. Carson Sur. ..... Drlg. shale 5,775 ft.
Shell Pet. Corp.'s No. 2 Harvey (Danbury), H.T.&B. R.R. Sur., 720 ft. SE of No. 1 Blakely-Winston ..... Rigging.

BRAZOS COUNTY

H. Elliott et al's No. 1 W. F. Odom, near center of 379-ac. tract in SW cor. of Isaac Curll Sur. ..... Cmtd. surface csg.
Liner et al's No. 1 Peters, 300 ft. SE line, 300 ft. SW line of E. V. Peter fee, G. Powell Sur. ..... Derrick.
F. H. Scott's No. 1 Kintworth, I. Curd Sur., 300 ft. from N line, 400 ft. from E line ..... T.D. 1,487 ft.; gas sand 1,393-1,420 ft.; cmtd. 8¼-in. csg. 1,-385 ft.; standing.

BURLESON COUNTY

Berry & Hays' No. 1 Young, 250 ft. from SW, 1,089 ft. from SE of 147-ac. tract, John Bird Sur. ..... Fishing 1,790 ft.
Poor Boy Oil Co.'s No. 2 Palinsky, A. G. Lawrence Sur., 300 ft. due S of No. 1 ..... Shale 1,025 ft.; standing.

CHAMBERS COUNTY

Smith & Lavender's No. 1 McCormick, F. Ludlow Sur., 150 ft. NE cor. ..... Derrick.

COLORADO COUNTY

Hughes-Patrick Oil Co.'s No. 1 Lake Side Irrigation, 1,500 ft. SE, 500 ft. NE NW cor. Patrick Reel Sur. ..... Drlg. shale 5,696 ft.
Plymouth Oil Co.'s No. 2 Ream, 1,000 ft. SW of No. 1, I.&G.N. Sur. ..... Drlg. shale 5,313 ft.
Weimar Dev. Co.'s No. 1 Janecka, H. Austin Sur. ..... Abd. 4,516 ft.

FAYETTE COUNTY

Colorado Oil Corp., J. Winn Sur., 650 ft. NE of center of SW line of 63.8-ac. tract ..... T.D. 2,139 ft.; standing.

FORT BEND COUNTY

O'Connor Dome Oil Co.'s (was A. N. Phillips et al's) No. 1 Grigar, 2,150 varas E line, 1,550 varas N line, J. S. O'Connor Sur. ..... T.D. 900 ft.; junked hole; skidded rig and spudded new hole.
Quintana Oil Co. and Great So. Life's No. 1 Great So. Life, Ed Robertson Sur., 500 ft. S of N line, 500 ft. W of Brazos River ..... Abd. 8,129 ft.
J. P. White's No. 1 Wing, B. Osborne Sur., 2,000 ft. from N, 4,000 ft. from E line of tract ..... Derrick.

GRIMES COUNTY

Clark & Dodd's No. 1 Murry, 150 ft. W line, 300 ft. S line, Anderson Sur. ..... Spudded; standing.
Cambrian Oil Co.'s No. 1 W. V. Sangster, John Moore Sur., 300 ft. out of most westerly NW cor. of 218-ac. tract ..... Derrick.
Foster et al's No. 1 Quinn, 7,100 ft. from W line, 3,900 ft. from N line of S. F. Austin Sur. ..... Drlg. shale 1,996 ft.
Humble O. & R. Co.'s No. 1 Henderson, 750 ft. S, 700 ft. W at R/A of NE cor. of lease, G. W. Seaton Sur. ..... Drlg. sand and shale 4,240 ft.
H. C. Ratcliff's No. 1 Fulgham, A. Tuttle Sur., 600 ft. N line, 540 ft. W line of lease ..... Derrick.
O. C. Rush's No. 1 J. C. League, V. Sanders Sur., 165 ft. N, 455 ft. W of lease ..... Rigging.

HARRIS COUNTY

J. A. Hodges' No. 1 Scott, 200 ft. S, 900 ft. W of intersection of Crosby Huffman, F. Rankin Sur. ..... Drlg. shale 2,949 ft.
G. T. Lewis, tr.'s No. 1 Gore, S. McKissick Sur., 518 ft. SW along SE line of 100-ac. tract from W cor. of S. V. Allen's 105-ac. tract and 500 ft. NW at R/A in 100-ac. tract (W.O.) ..... T.D. 6,079 ft.; standing.
Melba Oil Co.'s No. 1 House, Harris County School Sur., 162 ft. S, 600 ft. N of NE cor. Sec. 32 ..... Drlg. gumbo 858 ft.
Russell et al's No. 1 Burt & Griffith, S. Keely Sur., 200 ft. N line, 200 ft. E of highway ..... T.D. 2,156 ft.; standing.
Jack Schultz et al's No. 1 Synd. Land Co., 2,200 ft. N of S line, 200 ft. W from SE cor. Pruitt Sur. ..... T.D. 5,416 ft.; standing.
R. E. Young et al's No. 1 Paddock, J. Cunningham Sur., 300 ft. W of E line of Blk. 41 on line dividing Blks. 46 and 47 ..... Standing 1,800 ft.

HOUSTON COUNTY

Thompson et al's No. 1 E. W. Harrison, 330 ft. out E cor. 130-ac. tract, J. Masters, Sr., Sur. ..... T.D. 5,512 ft.; topped Austin chalk 5,395 ft.; waiting 4-in. drill pipe.

JACKSON COUNTY

Ed Parsons et al's No. 1 Clark, 300 ft. out SW cor. of R. J. and M. Clark lease, A. S. White Sur. ..... Drlg. shale 4,255 ft.

JEFFERSON COUNTY

Lucky Strike Oil Co.'s No. 1 Walker, D. Easley Sur., 2,100 ft. N, 1,400 ft. E of NW cor. of Lot No. 13 ..... Drlg. shale 1,050 ft.
Sun Oil Co.'s No. 1 H. Long, 1,500 ft. N line, 990 ft. E line of lease ..... Derrick.
Sun Oil Co.'s No. 1 Paggi, 900 ft. W, 1,610 ft. N of SE cor. of T.&N.O. Sur. No. 32 ..... T.D. 7,367 ft.; P.B. to 6,095 ft.; abd.
Texas Co.'s No. 1 J. R. Bevil, 150 ft. each way out of NE cor. of lease, Brown & Caswell Sur. ..... Drlg. shale 6,223 ft.

LEON COUNTY

Shell Pet. Corp.'s No. 1 A. Boggs, 405 ft. N, 1,128 ft. E of inside line of lease, John Carter Sur. ..... T.D. 6,072 ft.; P.B. to 5,852 ft.; setting tubing.

LIBERTY COUNTY

Gulf Prod. Co.'s No. 1 Kirby Lbr. Co., 900 varas S of N line, 1,400 varas E of W line, J. Pleasant Sur. ..... Drlg. shale 4,806 ft.
Layton et al's No. 1 J. A. Lovett, 200 ft. W of E line, 660 ft. N of S line of lease, P. P. Devers Sur. ..... Cmtd. csg. 785 ft.
E. V. Parsons et al's No. 1 Foster Lbr. Co., Ann Holhausen Sur., 750 varas S line, 3,700 varas W of E line ..... Derrick.
Thomas et al's No. 1 A. Ercke, 600 ft. E of W line, 2,350 ft. N of S line, A. H. Ercke Sur. in Reason & Green Sur. ..... Drlg. sand 4,817 ft.

MATAGORDA COUNTY

Continental Oil Co.'s No. 1 Baker, 400 ft. out of SW cor. Lot 17, Robbins & Middle Subd., J. W. Criswell Sur. ..... T.D. 6,504 ft.; to shoot csg. 5,-973-6,003 ft. to test gas show.
Oils Consd., Inc.'s No. 1 Hawkins, Daniel McCarthy Sur., 1,240 ft. NE, 350 ft. NW of S cor. ..... Fishing 5,510 ft.
United North & South Dev. Co.'s No. 1 Unit 6 (No. 2 Stoddard), 25 ft. each way out of NW cor. of Lot 19, Buckeye townsite ..... T.D. 7,872 ft.; set whipstock 7,512 ft.; drlg. new hole 7,856 ft.
United North & South Dev. Co.'s No. 1 Unit 25, 1,335 ft. S, 1,000 ft. E of No. 1 Unit 6 ..... O.S. 8,169-79 ft.; recmtd. csg. 8,-079 ft.

MONTGOMERY COUNTY

Baker et al's No. 1 Benker, D. James Sur. ..... Drlg. sand 4,809 ft.
Derring & Frazier's No. 1 Rolph, H. Blood Sur., 660 ft. from center of survey ..... Drlg. shale 3,878 ft.
Sutton & Hawkins' No. 2 Foster est., 90 ft. E of No. 1, A. M. Del Garza Sur. ..... T.D. 1,509 ft.; P.B. to 1,100 ft.

ORANGE COUNTY

Blue Line Oil Co.'s No. 1 Godwin, Richard Ballew Sur., 300 ft. from E line, 150 ft. from NE cor. of Godwin 20-ac. tract ..... Drlg. shale 465 ft.
Texas Louisiana Oil Co.'s No. 1 Starks, 2,450 ft. N of NW cor. M. Delano Sur. 68, 10,500 ft. E at R/A ..... T.D. 1,197 ft.; standing.

POLK COUNTY

D. B. McCall's No. 1 Faulkner, 350 ft. W of center of E line of 200-ac. tract, G. B. Dikes Sur. ..... Standing 1,015 ft.
Dick Schwab's No. 2 Kirby, G. S. Thomas Sur., 330 ft. out of SW cor. of 250-ac. tract, of 500-ac. tract ..... Drlg. shale 4,692 ft.

REFUGIO COUNTY

C. B. Bunte et al's No. 1 F. B. Rocke, J. M. Aldritte Sur., CWL of Sec. 4 ..... Drlg. sand 5,026 ft.
Holland Oil Co.'s No. 1 Peck, 366 ft. N and W from SW cor. Sec. 24, Bonnie View Subd. ..... Drlg. 305 ft.
Humble O. & R. Co.'s No. 10 O'Connor, Powers & Hewitson Sur., 15,133 ft. N of S line, 7,302 ft. W of E line, of J. Keating Sur. ..... Drlg. 3,092 ft.; S.G.
Texas Co.'s No. 1 Rooke, J. M. Aldritte Sur., 7,500 ft. S 53 deg. W, 850 ft. 37 deg. W of N cor. survey ..... Sandy shale 6,171 ft.; reaming.

SAN JACINTO COUNTY

Piedmont Oil Co.'s No. 2 Foster Lbr. Co., 330 ft. each way out of NE cor., Geo. Taylor Sur. ..... Moving in material.

TRINITY COUNTY

T. M. Smith et al's No. 1 C. Moody, E. Roberts Sur., 552 ft. W of E line, 1,202 ft. N of S line, of 40-ac. tract ..... Standing 1,890 ft.

TYLER COUNTY

Denton & Akin's No. 1 Seaman, 345 ft. from W line, 490 ft. from S line of W. Barclay Sur. ..... Drlg. clay 100 ft.

VICTORIA COUNTY

J. F. Camp's No. 1 Maurer, 330 ft. NE cor. Maurer's 178 acres, R. Manchola Sur. ..... Fishing screen 4,456 ft.
Stoneleigh O. & G. Co.'s No. 1 Dietzel, 330 ft. out of NW cor. of Dietzel's 95-ac. tract, R. Manchola Sur. ..... Standing 4,542 ft.
Stoneleigh O. & G. Co.'s No. 2 E. B. Terrell, 330 ft. out of SE cor. of Terrell's 215-ac. tract, R. Manchola Sur. ..... Moving in derrick.
Stoneleigh O. & G. Co.'s No. 1 Trybble, 330 ft. out of SE cor. Trybble's 122-ac. tract, R. Manchola Sur. ..... Moving in derrick.
Texas Co.'s No. 7-A McFaddin, 250 ft. due N of No. 7, A. J. Gray Sur. ..... T.D. 1,599 ft.; pumping mud.
Texas Co.'s No. 8 McFaddin, A. J. Gray Sur., 6,600 ft. N of S line, 1,383 ft. from E line of NE cor. ..... T.D. 1,212 ft.; repairing derrick.

WALKER COUNTY

McDowell et al's No. 1 Thompson, Jackson Crouch Sur., 330 ft. E of W line, 1,020 ft. S of N line ..... Derrick.

WALLER COUNTY

Hobson & Moore's No. 1 Peters, Justo Liendo Sur., 590 ft. W of creek and 1,144 ft. N of S cor. ..... T.D. 5,570 ft.; cmtd. back to 4,-383 ft.; drilled to 4,465 ft. to test.

WHARTON COUNTY

Harvey & Rusk's No. 1 Reid, 1,000 ft. SW, 500 ft. SE from N cor. of lease, Francis Biggam Sur. ..... Drlg. shale 2,675 ft.
Monarch Oil Co.'s No. 1 Schateck, 150 ft. each way out of SW cor. G. W. Reynolds Sur. ..... Drlg. shale 1,475 ft.
Nabert et al's No. 1 Lurker, 210 ft. out of SE cor. of N½ SW Sec. 58, E.T.R.R. Sur. ..... T.D. 5,026 ft.; pulled in derrick.
Pure Oil Co.'s No. 1 W. Garrett, Sec. 28, 4,456 ft. SE, 1,690 ft. NE of W cor. ..... T.D. 6,342 ft.; standing.
Pure Oil Co.'s No. 1 A. J. Wilder, T. W. Hurd Sur., 509, 2,575 ft. SE, 1,690 ft. NE from W cor. Sec. 28 ..... Drlg. 7,612 ft.
Pure Oil Co.'s No. 1 Stewart, 2,419 ft. NW, 1,650 ft. NE of S cor. Sec. 25, Morris & Cummings Sur. ..... Comp. 232 bbls.; ½-in. choke, 5,-976 ft.
Pure Oil Co.'s No. 1 Chas. T. Kuntze, 2,183 ft. from NW line, 467 ft. from SW line, Sec. 27, Morris & Cummings Sur. ..... Cmtd. csg. 7,118 ft.; standing.
Pure Oil Co.'s No. 1 W. H. Lancaster, Morris & Cummings Sur., Sec. 23, 1,650 ft. NW, 1,600 ft. SW of E cor. of section ..... Drlg. sand 7,084 ft.
Pure Oil Co.'s No. 1 Willis McIntyre, 1,650 ft. S of N line, 1,759 ft. S of E line of section ..... Drlg. shale 6,473 ft.
Pure Oil Co.'s No. 1 Wallace Houston, 858 ft. SE of NW line, 1,690 ft. NE of SW line, Sec. 28, (T. W. Heard Sur.) ..... Sand 6,441-51 ft.; setting up new rig.
Pure Oil Co.'s No. 1 Isaac Weaver, J. M. Brownson Sur., Sec. 22, 1,650 ft. out of N cor. of section ..... T.D. 6,181 ft.; standing.
Smith, McDannald and Pure Oil Co.'s No. 1 B. M. Yeamans, 330 ft. out of N cor. of B. M. Yeamans Sur., Abst. 913 ..... Tested S.W. at 6,196 ft.; standing.

Gulf Coast Proven Areas

SOUTH LOUISIANA FIELD

BLACK BAYOU—CAMERON PARISH

Shell Pet. Corp.'s No. 17 Watkins, 660 ft. E of No. 15, in Sec. 18-12s-12w ..... Drlg. shale 3,280 ft.

CAMERON MEADOWS—CAMERON PARISH

Humble O. & R. Co.'s No. 4 Cameron Meadows, 360 ft. N, 600 ft. W, SE cor. Sec. 21-14s-13w ..... Fishing 5,521 ft.
Humble O. & R. Co.'s No. 5 Cameron Meadows, 2,260 ft. W, 28 ft. S of NE cor. Sec. 21-14s-14w ..... Driving piling.
Burton-Sutton Oil Co.'s No. 2 School Land, 1,866 ft. W, 150 ft. N of SE cor. Sec. 16-14s-13w ..... Rigging.

CHOCTAW—IBERVILLE PARISH

Standard Oil Co. of La.'s No. 5 Myrtle Grove, 1,700 ft. N, 200 ft. W, SE SW cor. SW Sec. 52-9s-11e ..... Drlg. shale 4,000 ft.

EDGERLY—CALCASIEU PARISH

S. A. Emerson's No. 12 Hunter, 465 ft. N, 90 ft. E, SW cor. Sec. 21-9s-11w (W.O.) ..... Standing 4,118 ft.
Union Sulphur Co.'s No. 1 Hunter, 210 ft. E, 1,260 ft. N of SW cor. SE Sec. 21-9s-11w ..... Drlg. sand 4,397 ft.
Yount Lee Oil Co.'s No. 1 Sulphur Mining Co., 150 ft. S, 300 ft. W, NE cor. Sec. 33-9s-11w ..... Drlg. shale 4,907 ft.

GARDEN ISLAND—PLAQUEMINES PARISH

Texas Co.'s No. 10 Garden Island ..... Drlg. shale 383 ft.

GUEYDAN—VERMILLION PARISH

Pure Oil Co.'s No. 6 Alliance Trust, 667 ft. E, 1,787 ft. S line of lease, Sec. 34-11s-1w ..... Rigging up.
Pure Oil Co.'s No. 5 Mulvey, 500 ft. from No. 2 Mulvey, in line with Nos. 1 and 2 ..... Drlg. sand 4,438 ft.

HACKBERRY—CAMERON PARISH

Wilford Lahay et al's No. 1 Roux (W.O.) ..... Drlg. lime 3,540 ft.
J. G. Sutton's No. 1 Little, 2,321 ft. W, 1,670 ft. N, SE cor. Sec. 32-12s-10w (W.O.) ..... Sand 3,056 ft.; comp. 45 bbls. dly.
Texas Co.'s No. 11-B State ..... Derrick.
Union Sulphur Co.'s No. 1 Barber est., 1,720 ft. N line, 320 ft. E of SW cor. Sec. 13-13s-10w ..... Drlg. shale 6,950 ft.
Union Sulphur Co.'s No. 8 Humble ..... Sand 5,951-64 ft.; comp. gas well; T.D. 5,968 ft.

IOWA—CALCASIEU AND JEFF DAVIS PARISHES

Barnsdall Oil Co.'s No. 3 Fontenat, 1,627 ft. S, 330 ft W from SW cor. Sec. 7-9s-6w ..... Drlg. shale 4,995 ft.
Magnolia Pet. Co.'s No. 1 Le Blew, 670 ft. W, 330 ft. S of NE cor. SE Sec. 14-9s-7w ..... Drlg. shale 5,898 ft.
Magnolia Pet. Co.'s No. 5 Waite, 660 ft. E, 300 ft. N, SW cor. SE Sec. 12-9s-7w ..... Drlg. sand 5,016 ft.
Shell Pet. Corp.'s No. 1 Arcoin, 330 ft. out of NW cor. 80-ac. tract, Sec. 7-9s-6w ..... Derrick.
Shell Pet. Corp.'s No. 1 Tuten, 265 ft. S, 330 ft. W of NE cor. SW Sec. 13-9s-7w ..... Sand 6,598 ft.; cmtd. csg.
Shell Pet. Corp.'s No. 1 Johnson, 265 ft. S, 330 ft. E of NW cor. SW Sec. 18-9s-6w ..... Drlg. shale 5,201 ft.
Shell Pet. Corp.'s No. 1 C. Le Blew, 660 ft. W, 330 ft. N of SE cor. of lease ..... Drlg. shale 4,339 ft.

JENNINGS—ACADIA PARISH

Reliable Oil Co.'s No. 3 Rawson & Haber (W.O.), 1,800 ft. N, 400 ft. W of SE cor. Sec. 46-9s-2w ..... Abd. 2,250 ft.
S. Rhodes' No. 104 Latrielle (W.O.), Sec. 47-9s-2w ..... Drlg. shale 1,970 ft.
Yount Lee Oil Co.'s No. 13 Houssiere-Latrielle, Sec. 47-9s-2w, 300 ft. E of No. 12 ..... Drlg. shale 6,713 ft.

LAKE BARRE—TERREBONNE PARISH

Texas Co.'s No. 10 L.L.&E., 4,543 ft. S, 503 ft. W of NW cor. Sec. 30-21s-20 ..... Derrick.
Texas Co.'s No. 22 State-Lake Barre, 150 ft. northerly from No. 18 ..... Drlg. shale 5,292 ft.
Texas Co.'s No. 20 State-Lake Barre, 392 ft. northerly from No. 22, Sec. 30-21s-20e ..... Derrick.
Texas Co.'s No. 25 State-Lake Barre ..... Drlg. lime 2,573 ft.
Texas Co.'s No. 26 State-Lake Barre, 150 ft. northerly from No. 22 ..... Derrick.

LAKE WASHINGTON—PLAQUEMINES PARISH

Humble O. & R. Co.'s No. 3 La. State, Twp. 20s-26e, 2,920 ft. N, 19 ft. E of station ..... Drlg. shale 3,680 ft.

LEESVILLE—LAFOURCHE PARISH

Gulf Ref. Co.'s No. 2 City of New Orleans, 240 ft. E, SE cor. Lot 4, Sec. 26-21s-22e ..... Comp. 240 bbls.; ½-in. choke, 3,713 ft.
Gulf Ref. Co.'s No. 1 Community, Blk. C, 151 ft. N of S line, 100 ft. E of E bank of Bayou La Fourche, Sec. 23-21s-22e ..... Drlg. shale 3,847 ft.
Gulf Ref. Co.'s No. 1 Community, Blk. E, 151 ft. N of S line, 150 ft. E of E bank of Bayou La Fourche, Sec. 23-21s-22e ..... Derrick.
Gulf Ref. Co.'s No. 1 Le Fort, 100 ft. N of S line, 100 ft. W of N bank of Bayou La Fourche, Sec. 23-21s-22e ..... Drlg. shale 4,681 ft.
Hellis et al's No. 1 State-Bayou Lafourche, 315 ft. N along W side of bayou at R/A, 96 ft. E at R/A from SE cor. Lot 3, Sec. 26-21s-22 ..... Derrick.
Texas Co.'s No. 8 L.L.&E., 2,321 ft. due S, 450 ft. W from NE cor. Sec. 27-21s-22e ..... Drlg. shale 1,018 ft.
Texas Co.'s No. 9 L.L.&E., 2,921 ft. S, 900 ft. W from NE cor. Sec. 27-21-22e ..... T.D. 3,713 ft.; comp. 70 bbls. per hr.; ½-in. choke.
Texas Co.'s No. 10 L.L.&E., 3,500 ft. due S, 375 ft. due W of NE cor. Sec. 27-21s-22e ..... Rigging.
R. Y. Walker's No. 1 State-Bayou Lafourche, 930 ft. N along W line of Lot 6 from SW cor. section, thence 430 ft. at R/A, Sec. 26-21s-22 ..... Moving in material.

LOCKPORT—CALCASIEU PARISH

Magnolia Pet. Co.'s No. 7 Farquaher, 330 ft. S, 174 ft. W of NE cor. SW NE Sec. 8-10s-9w ..... Derrick.
Magnolia Pet. Co.'s No. 11 Bordages, 660 ft. N, 490 ft. W of SE cor. NE NE Sec. 8-10s-9w ..... Drlg. shale 4,942 ft.
Magnolia Pet. Co.'s No. 4-A Watkins fee, 635 ft. E, 200 ft. N of SW cor. NW NE Sec. 9-10s-9w ..... Drlg. shale 6,394 ft.
Union Sulphur Co.'s No. 1 Farquaher, 300 ft. S and W lines, NE cor. SW SE Sec. 36-12s-10w, 2-ac. tract .... Drlg. gumbo 4,950 ft.
Union Sulphur Co.'s No. 1 Moss (W.O.) ..... T.D. 6,244 ft.; P.B. to 5,812 ft.; fishing.

NEW IBERIA—IBERIA PARISH

G. D. Spell, 3,138 ft. SW cor. along W boundary line, then in a NE direction 1,140 ft. along N line of Bernard property in Sec. 54-12s-1e ..... Drlg. shale 2,698 ft.

PORT BARRE—ST. LANDRY PARISH

Cale O. & G. Co.'s No. 1 Thompson ..... Drlg. sand 3,454 ft.
Gulf Ref. Co.'s No. 5 Wilson-Cockran, 600 ft. N, 910 ft. E of No. 3, Sec. 4-6s-5e ..... Rigging.
Texas Co.'s No. 17 Botney Bay, 1,800 ft. S 8 deg. W, 600 ft. N 82 deg. most southern NE 560 deg. tract, Sec. 4-6s-5e ..... Derrick.
Texas Co.'s No. 18 Botney Bay ..... Sand 3,419-93 ft.; S.O.
Texas Co.'s No. 19 Botney Bay ..... Derrick.

SORRENTO—ASCENSION PARISH

Union Sulphur Co.'s No. 2 Lacy White Frank, 1,175 ft. N, 1,615 ft. W of SE cor. Sec. 16-10s-4e ..... Drlg. shale 4,271 ft.
Union Sulphur Co.'s No. 25 United Land ..... Drlg. shale 3,767 ft.

STARKS—CALCASIEU PARISH

Union Sulphur Co.'s No. 4 Industrial Lbr. Co., 2,254 ft. from W, 2,116 ft. from S line, NE cor. Sec. 30-9s12w. Moving in material.

SULPHUR—CALCASIEU PARISH

Union Sulphur Co.'s No. 786 fee ..... T.D. 5,170 ft.; comp. 1,100 bbls.; ⅝-in. choke.
Union Sulphur Co.'s No. 787 fee, 119 ft. from N line, 1,632 ft. from W line of C Sec. 29-9s-10w ..... Drlg. shale 2,835 ft.
Union Sulphur Co.'s No. 788 fee, 602 ft. S, 1,209 ft. W. of C Sec. 29-9s-10w ..... Drlg. gumbo 1,802 ft.
Union Sulphur Co.'s No. 789 fee, 1,653 ft. N, 795 ft. E, C, Sec. 29-9s-10w ..... Derrick.

SWEET LAKE—CAMERON PARISH

Pure Oil Co.'s No. 12 Yount Lee fee, 800 ft. S of No. 11, in line with Nos. 9 and 11, Sec. 12-13-3w ..... Rigging.

VINTON—CALCASIEU PARISH

Marrs McLean's No. 16 Gray, 426 ft. N, 658 ft. E of SW cor. Sec. 33-10s-12w ..... Rigging.
Starks & Broker's No. 11 A. J. Vincent, NW cor. SE Sec. 33-10s-12w ..... Moving in material.
Wilson Broach's No. 10 Wilson Strip, 650 ft. N, 379 ft. E, SW cor. SE NE Sec. 33-10s-12w ..... Derrick.
Wilson Broach Co.'s No. 12 Wilson Strip, 250 ft. N, 643 ft. E of SW cor. SE NE Sec. 33-10s-12w ..... Derrick.
Gulf Ref. Co.'s No. 8 Gardner, 350 ft. from S line in center Strip No. 6, Sec. 33-10s-12w ..... Drlg. sand 3,694 ft.
Gulf Ref. Co.'s No. 71 Gardner, 353 ft. W, 50 ft. S of NE cor. NE SE Sec. 33-10s-12w ..... Drlg. gumbo 1,212 ft.
Union Sulphur Co.'s No. 1 Vincent ..... Drlg. shale 4,490 ft.
Vinton Pet. Co.'s No. 59 Gray (W.O.) ..... Rigging; T.D. 2,285 ft.
L. N. York's No. 1 Mayo (W.O.) ..... Rigging; T.D. 3,187 ft.

Wildcat Operations in Southwest Texas

(Continued from Page 45)

Fred A. Perrenot's No. 1 Russell, 750 varas from NE line, 54 varas from NW line of 500-ac. tract in Rodriquez Sur. ..... T.D. 1,315 ft.; standing.
H. A. Fagenkopf's No. 1 G. A. Goeth, 500 ft. from SE line, 400 ft. from SW line which is San Antonio River, Juan Montes Sur. ..... T.D. 2,010 ft.; sidetracking; will go to Edwards.
C. A. Smith's No. 1 Henry Lamb, 750 ft. from N and E lines of Lamb farm, in de la Garza grant ..... T.D. 730 ft.; drlg.
F. E. Tegler's No. 1 Brackenridge, 578 ft. from S line, 2,384 ft. from W line of tract in Maria Gertrudis de Alanis Sur. ..... T.D. 1,320 ft.; reported abd. last week by mistake; moving in big rig.
W. L. Umburn's No. 1 Otto Jackel, 150 ft. from S and E lines of Jackel 391-ac. tract in Samuel McCulloch Sur. No. 54 ..... T.D. 670 ft.; drlg.

BLANCO COUNTY

Blanco Development Co.'s (McGee) No. 1 A. J. Dittmar, 1,320 ft. from S line, 150 ft. from W line of George Evans Sur. No. 58, 4 miles NW of Johnson City ..... T.D. 1,068 ft.; drlg.
Isham et al's No. 1 Lester ranch, 200 varas from N and E lines of Antonio Bandrand Sur., 3 miles NE from Johnson City ..... T.D. 405 ft.; S.D.

CALDWELL COUNTY

E. L. Hope and Joe Cole's No. 1 Mike August, 150 ft. from NE line, 165 ft. from NW line of tract ..... T.D. 1,961 ft.; S.D.
F. L. Thomson's No. 2 Lawler, 150 ft. from NW line, 450 ft. from SW line and road in J. H. Lawler's 134-ac. tract in James Berry Sur. ..... T.D. 2,380 ft.; drlg. Georgetown.

DE WITT COUNTY

Bunte, Inc.'s No. 1 Hilgartner, 330 ft. out of SE cor. of W 200 acres of Hilgartner's 415-ac. tract in Caleb Wilburn Sur. ..... T.D. 900 ft.; drlg.

DUVAL COUNTY

Eaton et al's No. 1 Herbst, 1,650 ft. from E line, 330 ft. from S line in S.A.&M.G. Sur. No. 71 ..... T.D. 510 ft.; drlg.
O. W. Killam's No. 3 Wood-Welder, 6,123 ft. from S line, 200 ft. from W line in Sur. No. 102 ..... T.D. 2,073 ft.; milling out csg.
O. W. Killam's No. 4 Wood-Welder, 500 ft. from N line, 200 ft. from W line in Sur. No. 102 ..... T.D. 1,480 ft.; in Cole sand; S.D. waiting on orders.
G. G. Mortimer's No. 2 Peal, 330 ft. from S and E lines of W½ of Sur. No. 796 ..... T.D. 2,508 ft.; abd.
W. A. Smith's No. 1 Holzapfel, west central part of lease, 900 ft. W of NE cor. of Sur. 344 and 159 ft. from N line of Sur. No. 42 ..... T.D. 1,865 ft.; drlg.
Whitting's No. 1 Duval County Ranch Co., 1,511 ft. from S line, 2,143 ft. from W line of Blk. 21, of Sur. No. 196 ..... T.D. 1,817 ft.; drlg.

EDWARDS COUNTY

Love and Evans' No. 1 Steve Brown, 660 ft. from N and E lines of Sec. 66, G.W.T.&P.R.R. Sur., 15 miles W of Rock Springs ..... T.D. 3,002 ft.; at contract depth.

FRIO COUNTY

Amerada Pet. Corp.'s No. 1 Frank Doering, 34 ft. from W line, 1,700 ft. from S line of Tract No. 7 in Marcia Louisa Carranza Sur. No. 302 ..... T.D. 6,064 ft.; fishing.

GONZALES COUNTY

Volz & Shelling's No. 1 Bennett Botts et al, 150 ft. from W line, 800 ft. from N line of 420-ac. tract, lease in Gonzales Sur. ..... T.D. 500 ft.; drlg.

GUADALUPE COUNTY

A. F. Barnhill's No. 3 F. A. Phillman, 1,300 ft. from N line, 152 ft. from E line of lease in L. Bollinger Sur. ..... Rigging up.
Potter et al's No. 1 Greenwood est., 470 varas from W line, 940 varas from NW line of Archibold Gibson Sur. ..... T.D. 1,886 ft.; chalk.
L. B. Trout's No. 1 Mrs. M. McKee, 650 ft. from W and 150 ft. from N line of 239-ac. tract in Green Dewitt Sur., 4 miles SW from Darst Creek ..... Delayed finding a contractor.

JIM WELLS COUNTY

Plymouth Oil Co.'s No. 1 Cuero Cattle Co., 330 ft. from S and W lines of H.T.&B. Sur. No. 7, 2½ miles W from Alfred ..... Rigging up.
Trinity Drillers' No. 1 Seeligson, 330 ft. from N and E lines of Sec. 71, of R. P. Haldeman Subd., and in S.K.&K. Sur. No. 215 ..... T.D. 3,475 ft.; drlg.

KARNES COUNTY

Arrowhead Drlg. Co.'s No. 1 Rudd, 1,320 ft. from S and E lines of 524-ac. tract in Adriance Sur. ..... T.D. 1,826 ft.; standing in shale; depth corrected.
C. J. Webster's No. 1 J. B. Cannon, 1,140 ft. from N line, 250 ft. from E line of 80-ac. tract in Lambrano Sur. ..... T.D. 1,790 ft.; drlg.

KENDALL COUNTY

A. P. Pierce's No. 1 Werner, in SW cor. of 40-ac. tract, 150 ft. from S and W lines, in J. F. Torrey Sur. .... T.D. 865 ft.; drlg. shale.
W. E. Waldrip's No. 1 Charles Meckel, 300 ft. from E line, 8,300 ft. from S line of Thos. J. Sweeney Sur. No. 10 ..... T.D. 415 ft.; W.O.C.

KERR COUNTY

J. E. Anderson's No. 1 J. D. Witt, 1,320 ft. from N line, 1,220 ft. from W line of Sec. 1,923, in Hamilton Sur., 4 miles S of Center Point ..... T.D. 1,885 ft.; standing in shale and sand.
Van Duyn & Moore's No. 1 Nowlin, 2,000 ft. from E line, 2,200 ft. from N line of Jas. R. Bettner Sur. No. 99 ..... T.D. 1,040 ft.; standing.

LA SALLE COUNTY

Equity Oil Co.'s No. 1 Rogers, 202 ft. from E line, 455 ft. from S line of lease in Atascosa County School Land Sur. No. 300 ..... T.D. 375 ft.; moving in heavy rig.
E. C. Meac's No. 1 R. J. Kroschewsky (320-ac.), 150 ft. from N and W lines of SE Sec. No. 180 ..... Location abd.
W. H. Wallace's No. 1 H. C. Yeager, 150 ft. from S and E lines of Sur. No. 95 ..... T.D. 2,215 ft.; standing.

LIVE OAK COUNTY

S. B. Hood's No. 1 Byler, 150 ft. from NW and NE lines of Sur. No. 91 ..... Derrick up and slush pits dug.
Stuart Mossman's No. 1 W. J. Armstrong, 2,970 ft. from S line, 330 ft. from W line of 269-ac. tract in Henry Sur. ..... Moving in.

McMULLEN COUNTY

Armoil Prod. Co.'s No. 1 Kate Martin, 1,470 ft. from SE line, 1,470 ft. from SW line of H.T.&B. Sur. No. 9 ..... T.D. 1,320 ft.; drlg.
Paul C. Teas' No. 3 Hagist, 330 ft. from N and W lines of Sec. 19 ..... T.D. 2,172 ft.; abd.; dry.
Pitkin-Goldston Oil Co.'s No. 1 Hagist, 330 ft. from N line, 900 ft. from E line of G. B. McKinney Sur. No. 467 ..... T.D. 2,227 ft.; cored shale 2,216-27 ft.; drlg. ahead.
Smith & Mowinkle's No. 1 C. L. Wulf, 1,517 ft. from S line, 188 ft. from W line of E½ Sec. 12 of Wentz Subd. ..... T.D. 200 ft.; drlg.
Two Rivers Oil Co.'s No. 1 H. F. G. Wulf, 330 ft. from N and E lines of SW Sec. 73, of Two Rivers Ranch Subd. ..... T.D. 300 ft.; drlg.

MEDINA COUNTY

O. R. Framme's No. 1 E. Boelke, 987 ft. from N line, 600 ft. from E line of 102-ac. tract in S. Huth Sur. No. 10 ..... T.D. 575 ft.; drlg.

MILAM COUNTY

O. H. Birdwell's No. 1 J. R. Bartek, 150 ft. from N line, 180 ft. from W line of 88-ac. tract in J. A. de Pena Sur. ..... Location.
B. F. Robinson's No. 1 W. M. Caffey, 150 ft. N and E, of SE cor. of B. P. Duncan Sur. in SW cor. of 50-ac. Caffey tract in J. Bright Sur. ..... T.D. 165 ft.; S.D.

NUECES COUNTY

Banquette Oil Co.'s No. 1 T. C. Ingram, 330 ft. from N and W lines of 80-ac. tract, Blk. 6, Sec. 7, of S. R. Peters Sur. ..... T.D. 4,882 ft.; tested 50 bbls. oil; 1,700 lbs.; 4,900 ft. of gas to bbl. of oil on ¼-in. choke.
Benedum & Trees' No. 1 J. O. Pickham, 1,812 ft. to S line, 400 ft. E of 304-ac. tract in G. Faris Sur. .... T.D. 6,000 ft.; drlg.
A. C. Erwin's No. 1 Sagarin, 520 ft. from N, 160 ft. from E line of 35-ac. tract in Sec. 4, H. L. Kenney Sur. ..... T.D. 4,408 ft.; drlg.
S. F. Hurlbut and Southwest Oil Co.'s No. 1 Poenisch, center Blk. 3, Sec. 32, Flowerbluff & Encinal farm, 8 miles S from Corpus Christi ..... T.D. 6,520 ft.; dry and abd.

Texon Royalty Co.'s No. 1 McCoy, 330 ft. from W line, 3,330 ft. from S line, in Sec. 3 of Palo Alto Sur. ... T.D. 5,500 ft.; test at about 4,800 ft. failed to show due to mud standing on sand for 2 weeks; drlg.

STARR COUNTY

Accumulative Royalty Co.'s No. 1, Martinez, 800 ft. from S line, 500 ft. from W line of C.C.S.D.&R. G.N.G. Sur. No. 217 ..... T.D. 2,865 ft.; S.D.

B. & B. Oil Co.'s No. 2 Kelsey Bass, 330 ft. from W and S lines of Blk. 12 of Subd. of Porcions 86 and 87, jurisdiction Camargo ..... Rigging up.

Danvers & Hassion's No. 1 C. Ramos, 2,310 ft. from SE line, 330 ft. from SW line of Sur. No. 150 ..... Rigging up.

Goodwin & Yantis' No. 4 Kelsey Bass, 330 ft. from N and E lines, Sec. 4, of subd. of Porcions 86 and 87.. T.D. 550 ft.; drlg.

Goodwin & Yantis' No. 8 Kelsey Bass, 150 ft. from S and E lines of Blk. 8, Coast O. & G. Subd. of Secs. 2 and 3, Porcions 86-87 ..... T.D. 1,040 ft.; standing.

Goodwin and Yantis' No. 2 Walker, 3,000 ft. from S line, 2,000 ft. from W line of Sur. No. 767 ..... T.D. 2,505 ft.; dry and abd.

Myers, Sullivan & Jenkins' No. 1 Starr County Cattle Co., 330 ft. from N line, 330 ft. from W line, Blk. 63, Porcion 89, Share 60 ..... T.D. 2,503 ft.; standing; S.G.

R. D. Perkins & Hoffman's No. 1 E. A. Peffler, 3,090 ft. from W line, 2,480 ft. from S line of Sur. 933... T.D. 80 ft.; standing.

TRAVIS COUNTY

Franklin et al's No. 1-A Reimers, 1,200 ft. from SE line, 1,600 ft. from most southerly SW line of Sur. No. 35 ..... T.D. 925 ft.; drlg.

Fritz Fuch's No. 2-B Smith est, 900 ft. from NW line, 300 ft. from W line of Blk. 16, L. Kimbro Sur. ..... T.D. 781 ft.; dry and abd.

Marts & Beavens' No. 1 Sandahl, 150 ft. from N and E lines of 106-ac. tract in Thos. Smith Sur. ..... T.D. 780 ft.; flowed S.W.

Weaver & Osborn's No. 1 Will Reinhardt, 300 ft. from NW line, 1,200 ft. from NE line of Will Reinhardt 100-ac. tract in William Lewis, Jr., Sur. 2 ..... T.D. 248 ft.; standing.

UVALDE COUNTY

Frank A. Brown's No. 1 Milliken, 1,800 varas from W line which is Sabinal River, and 108 varas from S line of Antonio Cruz Sur. No. 332 ..... T.D. 435 ft.; drlg.

WEBB COUNTY

Frank Garvis' No. 1 Yeager-Stroman, 200 ft. from S line, 450 ft. from E line of Share 5 in Los Animas grant ..... T.D. 2,198 ft.; standing.

WILLIAMSON COUNTY

R. L. Batts et al's No. 1 Rumel, 18 ft. from E line, 480 ft. from S line of 100-ac. tract in Booth Sur..... T.D. 1,300 ft.; fishing.

McLean et al's No. 2 R. C. Miller, 800 ft. to S line, 100 ft. to W line of tract, B. Manlove Sur. ..... T.D. 2,300 ft.; standing.

Pederson's No. 1 Forwood, 900 ft. from N and 1,200 ft. from E line of 160-ac. tract in Fisher Sur. ..... T.D. 950 ft.; S.D.

ZAPATA COUNTY

F. G. Delaney's No. 1 Leonard Haines estate, 330 ft. from SE line, 2,970 ft. from SW line of Villa Grant Sur. ..... T.D. 625 ft.; drlg.

J. P. Doyle's No. 1 I. Ramires, 150 ft. from NW and SW lines of Blk. 15, Share 1, Porcion 18 ..... T.D. 40 ft.; spudded in; S.D.

Arthur H. Wray's No. 3 Gopher Trust Estate, 660 ft. from SW line, 330 ft. from SE line of Blk. 13, Sur. 1, Fullerton Subd. of Share 9 ..... T.D. 360 ft.; abd.

Southwest Texas Proven Areas

Week Ending December 16

CEDAR CREEK POOL—BASTROP COUNTY

Cole Pet. Co.'s No. 2 American National Bank, 150 ft. from SE line, 250 ft. from SW line of 610-ac. tract in R. Gage Sur. ..... T.D. 1,697 ft.; Serpentine showing; waiting on cmt.

NORTH DALE POOL—BASTROP COUNTY

Marts & Beavens' No. 1-B C. L. Riddle, 525 ft. from NW line, 2,176 ft. from SW line of John Maxmillian Sur. No. 22 ..... T.D. 2,107 ft.; dry and abd.

Ogden & Reed's No. 1 Spradlin, 300 ft. from S line, 200 ft. from E line of 113-ac. tract in Gray Sur. .... T.D. 2,257 ft.; put on pump; 200 bbls. daily.

Ogden & Reed's No. 1 C. L. Riddle, 150 ft. from NW line, 3,750 ft. from SW line of Maxmillian Sur. .... T.D. 2,208 ft.; drlg.

PETTUS POOL—BEE COUNTY

United Prod. Co.'s No. 3 Ray, 3,388 ft. from N line, 958 ft. from E line of Moore Sur. ..... T.D. 6,054 ft.; W.O. job; being PB. to Pettus sand at 4,054 ft.

EAST COLE POOL—DUVAL COUNTY

Cole Pet. Co.'s No. 2 S. Benavides, 350 ft. from SE line, 300 ft. from SW line of Blk. 347 Hale Subd. of Arispe grant ..... T.D. 2,430 ft.; set csg.; tested 750 lbs. gas.

Motes-Campbell's No. 1 Bruni, 150 ft. from NE and SE lines of Sec. 493, Myrtle E. Hale Subd., Mariano Arispe grant ..... T.D. 20 ft.; spudded; waiting for wtr.

ECKERT POOL—BEXAR COUNTY

Alamo Nat. Gas Co.'s No. 2 Coreth, 300 ft. SE of Humble's No. 2 Coreth in A. Stafford Sur. ..... T.D. 765 ft.; S.D.

F. H. Eckert & Son's No. 8 Louis Brehm, 550 ft. from W line, 150 ft. from S line of 93-ac. tract in F. L. Buquor Sur. ..... Drlg.

Eckert & Son's No. 4 August Brehm, 250 ft. from E line, 300 ft. from N line of tract in Buquor Sur. .. T.D. 1,590 ft.; comp.; P.B. to sand at 651-70 ft.; 4 bbls. dly.

Gatlin Oil Co.'s No. 18 Beck, 545 ft. from E line, 1,051 ft. from S line of 279-ac. tract in Juan Montez Sur. ..... T.D. 150 ft.; drlg.

Gatlin Oil Co.'s No. 17 Mrs. Ida Beck, 565 ft. from NE line, 150 ft. from SE line of tract in Juan Montez Sur. ..... T.D. 720 ft.; comp. 10 bbls. dly.

J. F. Harrison's No. 1 F. Gembler, 150 ft. from NW line, 460 ft. from NE line of 88-ac. tract in J. Montez Sur. ..... T.D. 782 ft.; drlg.

Rosato & Co.'s No. 11 J. E. Halbardier, 400 ft. E of No. 10 in J. M. Peres Sur. ..... T.D. 710 ft.; comp. 6 bbls. dly.

S. J. Moore's No. 2 T. W. Masterson, 150 ft. from S line, 175 ft. from W line of 41-ac. tract in Miguel Gortaris Sur. ..... T.D. 550 ft.; drlg.

Swearingen Oil Co.'s No. 16 Halbardier, 150 ft. from N line of tract, 2,625 ft. E of NW cor. of survey in Jose M. F. Perez Sur. No. 57 ..... T.D. 670 ft.; set csg.

Trio Oil Co.'s No. 5 Sandemer, 200 ft. from E line, 150 ft. from S line of 109-ac. tract in Anton Manchaca Sur. No. 51 ..... T.D. 665 ft.; 7 bbls. daily.

VON ORMY POOL—BEXAR COUNTY

Von Ormy Oil Co.'s No. 2 E. B. Carruth, 515 ft. from W line, 1,970 ft. from S line of 160-ac. tract out of 657-ac. tract in F. Rolen Sur. ..... Rigging up.

DUNLAP POOL—CALDWELL COUNTY

Bob Rose's No. 1-B J. M. Price, 150 ft. from NE and SE lines of J. M. and O. Pierce 100-ac. tract in S. Seal Sur. ..... T.D. 2,527 ft.; in Edwards; dry.

WEBSTER POOL—CALDWELL COUNTY

C. J. Webster O. & G. Co.'s No. 2 McCroy, 750 ft. from S line, 150 ft. W of NE cor. of tract in John A. Neill Sur. ..... T.D. 2,200 ft.; standing.

EAGLE HILL POOL—DUVAL COUNTY

Al Buchanan's No. 3 Duval County Ranch Co., 330 ft. from S line, 2,310 ft. from E line of N½ of Sur. No. 206 ..... Location.

R. D. Kelley's No. 2 Foster, 1,650 ft. from E line of survey, and 990 ft. S of N line of S½ of Sur. No. 296. T.D. 1,484 ft.; swbng.

Al Buchanan's No. 2-B Foster, 330 ft. from S and E lines of N 100 acres of W 200 acres of S½ of Sur. No. 206 ..... Location.

Shasta Oil Co.'s No. 1 Foster, 330 ft. from N line, 330 ft. from E line of S½ of Sur. No. 206 ..... T.D. 900 ft.; drlg.

Texas Co.'s No. 6-A Duval County Ranch Co., 990 ft. from E line, 330 ft. from S line of N½ N½ of Sur. No. 206 ..... T.D. 1,488 ft.; set csg.

Texas Co.'s No. 7-A Duval County Ranch Co., 2,310 ft. from E line, 330 ft. from S line of N½ N½ of Sur. No. 206 ..... T.D. 1,405 ft.; drlg.

KOHLER POOL—DUVAL COUNTY

Humble O. & R. Co.'s No. 22 Kohler, 495 ft. from W line, 165 ft. from N line in Sur. No. 395 ..... T.D. 2,654 ft.; drlg.

NORTH GOVERNMENT WELLS POOL—DUVAL COUNTY

Al Buchanan's No. 4 B. T. Ellison, 330 ft. from N and W lines of NE NW of Sur. No. 44 ..... T.D. 2,298 ft.; set csg.; waiting on cmt.

Humble O. & R. Co.'s No. 25 C. W. Hahl, 330 ft. from S line, 1,650 ft. from W line of E½ of Sur. No. 360.. T.D. 2,312 ft.; comp. 47 bbls. hrly.

Humble O. & R. Co.'s No. 3 Duval County Ranch Co., 330 ft. from S line, 1,650 ft. from W line of NW of Sur. No. 362 ..... Set surface csg.

Humble O. & R. Co.'s No. 26 C. W. Hahl, 990 ft. from S line, 1,650 ft. from W line of E½ of Sur. No. 360.. T.D. 2,307 ft.; set csg.

Humble O. & R. Co.'s No. 27 C. W. Hahl, 1,650 ft. from S and E lines of E½ of Sur. No. 360 ..... Rigging up.

Humble O. & R. Co.'s No. 24 Hahl, 3,082 ft. from S line, 990 ft. from W line of Sur. No. 74 ..... T.D. 2,323 ft.; P.B. to 2,314 ft.; abd.

Humble O. & R. Co.'s No. 2 Duval County Ranch Co., 330 ft. from S line, 990 ft. from W line of NW of Sur. No. 362 ..... T.D. 2,286 ft.; comp. 71 bbls. first hr. on ¾-in. choke.

K. O. T. Oil Co.'s No. 2 Lundell, 150 ft. from S and E line, N½ of SW of 40-ac. tract in Sec. 48 ..... T.D. 2,255 ft.; comp. 50 bbls. dly.

Magnolia Pet. Co.'s No. 11 Duval County Ranch Co., 1,650 ft. from E line, 990 ft. from S line of Sur. No. 208 ..... Spudded in.

Magnolia Pet. Co.'s No. 12 Duval County Ranch Co., 2,310 ft. from E line, 990 ft. from S line of Sur. No. 208 ..... Location.

Magnolia Pet. Co.'s No. 13 Duval County Ranch Co., 2,970 ft. from E line, 990 ft. from S line of Sur. No. 208 ..... T.D. 210 ft.; drlg.

Magnolia Pet. Co.'s No. 9 Duval County Ranch Co., 990 ft. from S line, 1,609 ft. from W line of Sur. No. 208. T.D. 2,330 ft.; comp. 140 bbls. dly.

Magnolia Pet. Co.'s No. 10 Duval County Ranch Co., 990 ft. from S and E lines of Sur. No. 208 ..... T.D. 2,323 ft.; comp. 200 bbls. dly.

Magnolia Pet. Co.'s No. 3 Lundell, 330 ft. from S line, 150 ft. from W line of SE of Sur. No. 60 ..... T.D. 2,237 ft.; pumping 200 bbls. daily.

Navarro Oil Co.'s No. 27-A C. W. Hahl, 53 ft. N of No. 27, or 1,703 ft. from S line, 1,650 ft. from E line of W¼ of Sur. No. 360 ..... T.D. 2,286 ft.; testing.

Rodney DeLange's No. 2 Lundell, 660 ft. from E line, 480 ft. from S line of SE SW of Sur. No. 60 ..... T.D. 2,222 ft.; comp. 100 bbls. dly.

Reynosa Oil Corp.'s No. 6-A Duval Ranch Co., 330 ft. from N and E lines of N½ of SW of Sur. No. 362.. T.D. 2,290 ft.; tested S.W.; P.B. 4 ft.

Reynosa Oil Corp.'s No. 2-D Duval County Ranch Co., 990 ft. from W line, 330 ft. from S line of S½ SW of Sur. No. 362 ..... T.D. 2,300 ft.; set csg.; corrected from No. 3-D to No. 2-D.

Sun Oil Co.'s No. 11 Weiderkehr, 330 ft. from N and E lines of Sur. No. 359 ..... T.D. 2,332 ft.; comp. 15 bbls. hrly.

Sun Oil Co.'s No. 15 Weiderkehr, 990 ft. from N line, 1,650 ft. from W line of Sur. No. 359 ..... T.D. 1,533 ft.; coring.

Sun Oil Co.'s No. 14 Weiderkehr, 2,310 ft. from N line, 330 ft. from S line of Sur. No. 361 ..... T.D. 2,100 ft.; drlg.

Sun Oil Co.'s No. 16 Weiderkehr, 330 ft. from N line, 990 ft. from E line of Sur. No. 359 ..... Derrick.

Sun Oil Co.'s No. 17 Weiderkehr, 990 ft. from N and E lines of Sur. No. 359 ..... Rigged up.

Texas Co.'s No. 1-B Wendt, center of E 70 acres of NW of Sur. No. 43 ..... T.D. 1,300 ft.; drlg.

Texas Co.'s No. 7 W. C. Riggs, 990 ft. from S line, 150 ft. from W line of E½ NW Sur. No. 46 ..... T.D. 700 ft.; drlg.

SOUTH GOVERNMENT WELLS POOL—DUVAL COUNTY

Bridwell's No. 2 C. W. Hahl, 860 ft. from S line, 200 ft. from W line of Sur. No. 250 ..... Rigging up.

Humble O. & R. Co.'s No. 15 Paul White, 2,600 ft. from E line, 200 ft. from N line of Sur. No. 58 .... Location.

Humble O. & R. Co.'s No. 14 P. E. White, 330 ft. from N line, 1,980 ft. from E line of Sur. No. 249..... T.D. 2,268 ft.; flowing into pits ungauged.

Humble O. & R. Co.'s No. 13 Paul White, 2,300 ft. from E line, 300 ft. from N line of Sur. No. 249 ..... T.D. 2,267 ft.; comp. 175 bbls. daily on pump.

Humble O. & R. Co.'s No. 12 Paul White, 1,650 ft. from S and E lines of Sur. No. 249 ..... T.D. 2,288 ft.; flowing by heads; small well.

Rodney DeLange's No. 3 Lundell, 330 ft. from E line, 910 ft. from S line of Sur. No. 60 ..... Rigging up.

SARNOSA POOL—DUVAL COUNTY

Wertheimer Oil Corp.'s No. 2 Hernendez, 658 ft. SE of No. 1, and 357 ft. NE of SW line of E¼ of Sur. No. 574 ..... Location.

S. R. C. POOL—DUVAL COUNTY

S. R. C. Oil Co.'s No. 10 Duval County Ranch Co., 100 ft. from S line, 1,153 ft. from E line of Sur. No. 295.. T.D. 1,560 ft.; drlg.

PALANGANO POOL—DUVAL COUNTY

J. W. Edwards' No. 1 Gravis, 1,670 ft. from NE line, 1,830 ft. from SE line of Sur. No. 2 ..... T.D. 2,470 ft.; drlg.

WEST COLE FIELD—DUVAL COUNTY

Cole Pet. Co.'s No. 80 Rosa V. Benavides, 1,361 ft. from E line, 160 ft. from S line of Blk. 3 of Sur. No. 412..T.D. 400 ft.; drlg.

NEW BERLIN POOL—GUADALUPE COUNTY

J. A. Harper's No. 2 Rosenbrook, 660 ft. SW of No. 1...T.D. 595 ft.; set csg.

JACOB POOL—McMULLEN COUNTY

Loma Oil Co.'s No. 20-A Jacob, 660 ft. SW of No. 19-A, in G.H.&H. Sur. ..... T.D. 1,000 ft.; comp. 20 bbls. dly.

Loma Oil Co.'s No. 18-A Jacobs, 660 ft. S of No. 11, in W. H. Jacobs Sur. No. 8 ..... Derrick.

Longhorn Oil Co.'s No. 3-A Lark, 450 ft. from N line, 150 ft. from W line of Blk. 14, of Subd. of Lark land in E. W. B. Scrugham Sur. ..... T.D. 1,030 ft.; C.O

Kennon & Stephenson's No. 1 Lark, 150 ft. from N and W lines of Blk. 15, subd. of Lark land in E. W. B. Scrugham Sur. ..... T.D. 1,033 ft.; set csg.; W.O.C.

AGUA DULCE POOL—NUECES COUNTY

Garland Clymore's No. 1 Ollie Purl ..... T.D. 3,600 ft.; drlg.

CUEVITAS POOL—STARR COUNTY

Mims, Hamill & Evans' No. 1 M. Guerra, 330 ft. from E line, 330 ft. from S line of Share M-10, in Las Cuevitas grant ..... T.D. 2,275 ft.; drlg.; no sand reported.

Sun Oil Co.'s No. 3-A Guerra, 4,620 ft. from NW line, 660 ft. from SW line of Share H-14-B of Cuevitas grant ..... T.D. 2,309 ft.; comp.; P.B. to 2,190 ft.; 15,000,000 ft. gas.

Sun Oil Co.'s No. 1-D Guerra, 6,353 ft. from NE line, 3,300 ft. from SE line of La Sacatosa grant ..... Rigging up.

LOS OLMOS POOL—STARR COUNTY

Los Olmos O. & G. Co.'s No. 57 Kelsey Bass, 150 ft. from N line, 568 ft. from W line of SE SW Sec. 6, Porcions 75, 76 and 77 ..... T.D. 1,500 ft.; drlg.

CAROLINA-TEXAS POOL—WEBB COUNTY

Carolina-Texas Oil & Gas Trust's No. 11 Benavides, 150 ft. from S line, 600 ft. from W line of Blk. 12 in Sur. No. 683 ..... T.D. 2,247 ft.; drlg.

LAUREL POOL—WEBB COUNTY

South Texas Prod. Co.'s No. 10 Laurel, 425 ft. from W line, 150 ft. from S line of Blk. 2, in Sur. No. 270..T.D. 2,272 ft.; set csg.; W.O.C.

WEST COLE POOL—WEBB COUNTY

Cole Pet. Co.'s No. 80 Rosa V. Benavides, 1,361 ft. from E line, 160 ft. from S line of Blk. 3, Sur. No. 412..Rigging up.

BYERSVILLE POOL—WILLIAMSON COUNTY

Fritz Fuch's No. 1 C. W. Johnson, 600 ft. from SE line, 700 ft. from NE line of tract in P. Cartwright Sur. ....Drlg. 350 ft.

Taylor Prod. Co.'s No. 1 J. S. Jones, 450 ft. from NW and SW lines of Jones' 400-ac. tract in H. White Sur. ....T.D. 950 ft.; comp. pumping 75 bbls. daily.

ESCOBAS POOL—ZAPATA COUNTY

Allied O. & G. Co.'s No. 39 Gutierrez, 750 ft. from NE line, 3,063 ft. from SE line of Share 4 of Comitas grant ....T.D. 1,292 ft.; comp. 25 bbls. dly.

Texas Co.'s No. 35 Whitehead, 2,793 ft. from SE line, 20,442 ft. from SW line of Cerrito Blanco grant....T.D. 1,375 ft.; drlg.

W. E. West and J. P. Perry's No. 1 Garcia, 1,200 ft. from NW line, 200 ft. from NE line of Share 3 of Comitas grant ....T.D. 225 ft.; drlg.

JENNINGS POOL—ZAPATA COUNTY

United Prod. Corp.'s No. 11 Measles, 3,483 ft. from NW line, 16,500 ft. from SW line of Cerrito Blanco grant ....T.D. 4,476 ft.; P.B. to 1,369 ft.; W.O.C.

MARTINEZ POOL—ZAPATA COUNTY

W. R. Shankle and Wm. McGinley's No. 2 Manuel Trevino heirs, 330 ft. from W line, 150 ft. from S line of Blk. 15, Sur. No. 411 ....Location.

Wildcat Operations in Louisiana-Arkansas

(Continued from Page 33)

J. F. Anderson's No. 1 Burkett, 135 ft. N, 855 ft. E, SW cor. NW Sec. 10-9-13 ....Using acid 1,921 ft.

Nick Barbare's No. 1 Burkett, 500 ft. N, 900 ft. E, SW cor. NW Sec. 10-9-13 ....Set 6⅝-in. 1,486 ft.

J. W. Bettis et al's No. 1 Frost Lbr. Ind., 330 ft. S and W, NE cor. SW Sec. 15-9-13 ....Rigging up.

Calatex O. & G. Co.'s No. 1 Whitney Corp., 415 ft. N, 330 ft. E, SW cor. SE Sec. 4-9-13 ....Drlg. 1,718 ft.

Commerce Oil Co.'s No. 1 Paul, Sec. 9-9-13 ....Comp. flowing 50 bbls. 1,933 ft.

A. G. Craig's No. 1 Belton, 330 ft. N and E, SW cor. NW NW Sec. 33-9-13 ....S.D. 40 ft.

Florence Oil Co.'s No. 1 Crawford, 330 ft. S and W, C Sec. 20-9-13 ....Using acid 1,990 ft.

J. E. Freeman's No. 1 Barr, 990 ft. N and E, SW cor. NW Sec. 15-9-13 ....Set 6-in. 1,748 ft.

Gerhig Oil Co.'s No. 1 Burkett, 330 ft. S and W, NE cor. SE SE Sec. 9-9-13 ....Treating with acid 1,650 ft.

Helena O. & G. Co.'s No. 1 E. L. Graham, 330 ft. N and W, SE cor. NE NW Sec. 20-9-13 ....Set 10-in. 40 ft.

Helena O. & G. Co.'s No. 2 Chambliss, 330 ft. S and E, NW cor. SW NE Sec. 20-9-13 ....Testing 1,955 ft.

Helena O. & G. Co.'s No. 1 J. W. Tatum, 330 ft. N and W, SE cor. NE SE Sec. 9-9-13 ....Using acid 1,940 ft.

Helena O. & G. Co.'s No. 1 E. K. Harris, 990 ft. S and W, C Sec. 10-9-13 ....S.D. 1,955 ft.

R. P. Holland's No. 1 Harris, 587 ft. N, 530 ft. E, SW cor. SE NW Sec. 10-9-13 ....Drlg. 1,370 ft.

Mamie S. Hammond's No. 1 Patrick, 330 ft. N, 2,310 ft. W, SE cor. Sec. 1-9-13 ....Dry and abd. 3,225 ft.

R. P. Holland et al's No. 1 A. J. Burkett, 990 ft. N, 330 ft. W of C, Sec. 10-9-13 ....Using acid 1,850 ft.

W. F. Lacey's No. 1 Jackson, 196 ft. N, 804 ft. W, SE cor. NW NW Sec. 10-9-13 ....Set 6-in. 1,435 ft.

Lula M. Layton's No. 1 Henderson, 339 ft. N, 990 ft. E, C Sec. 29-9-13 ....Comp. flowing 75 bbls. 1,930 ft.

H. C. Lessinger's No. 1 Bowman-Hicks Lbr. Co., 338 ft. S and E, NW cor. SW Sec. 13-9-13 ....S.D. 3,403 ft.

Miles & Strickland's No. 1 Ross & Son, 150 ft. N, 900 ft. E, SW cor. NW Sec. 10-9-13 ....Drlg. 1,810 ft.

John W. Moffett's No. 1 Logan Oil Co., Sec. 3-9-13....Drlg. 1,952 ft.

C. L. Nixon's No. 1 Patrick, Sec. 21-9-13 ....Comp. pumping 10 bbls. 1,990 ft.

L. L. Posey's No. 2 Burkett, 330 ft. N and E, SW cor. NE NW Sec. 10-9-13 ....Drlg. 1,000 ft.

L. L. Posey's No. 1 A. J. Burkett, 330 ft. N and W, SE cor. 8⅛ NE NW Sec. 10-9-13 ....Comp. pumping 40 bbls. 1,838 ft.

Dr. C. R. Reed's No. 1 Allen, 495 ft. S, 600 ft. E, NW cor. Sec. 10-9-13 ....Set 10-in. 40 ft.

Sabine Royalties Co.'s No. 1 Graham, 330 ft. N and W, SE cor. W½ NW Sec. 20-9-13 ....Testing 1,878 ft.

Tex.-La.-Ark. Oil Co.'s No. 1 Bowman-Hicks, 295 ft. N, 440 ft. E, SW cor. SW NW Sec. 23-9-13 ....S.D. 2,020 ft.

Homer Tyson's No. 1 G. W. Hough, 330 ft. S and E, NW cor. SW NW Sec. 31-9-12 ....S.D. 40 ft.

J. B. Williams' No. 1 Tatum, 330 ft. N and W, SE cor. NW SE Sec. 32-9-13 ....Rigging up.

Windsor Oil Co.'s No. 2 Barr, 330 ft. N and E, SW cor. NW Sec. 15-9-13 ....Location.

SABINE—ZWOLLE

H. C. Maulding's No. 2 Alford, 330 ft. N and E, SW cor. NW NW Sec. 18-7-10 ....S.D. 1,300 ft.

H. C. Maulding's No. 1 Alford, 330 ft. S and W, NE cor. NW NW Sec. 18-7-10 ....Derrick.

H. C. Maulding's No. 1 Van Vickhaven, 330 ft. N and W, SE cor. NE Sec. 2-7-11 ....Drlg. 1,200 ft.

WEBSTER PARISH

J. P. Evans' No. 1 Miller, 400 ft. S, 300 ft. W, NE cor. SE Sec. 29-18-9 ....Set 10-in. 155 ft.; drlg. 1,775 ft.

Arkansas

COLUMBIA COUNTY

C. W. Alworth et al's No. 1 W. D. King, SW cor. SE SW Sec. 16-17-20 ....S.D.; repairing rig 3,026 ft.

O. F. Whittaker's No. 1 Garner, C SW NE Sec. 11-15-20..Comp. pumping 12 bbls. 2,102 ft.

CONWAY COUNTY

Sou. Union Gas Co.'s No. 1 Feldman, C SW SW Sec. 6-6-17 ....Drlg. 2,103 ft.

JEFFERSON COUNTY

J. E. Elliott's No. 1 B. V. Nevin, 440 ft. N and E, SW cor. SW NW Sec. 26-4-10 ....Rigging up.

HEMPSTEAD COUNTY

A. H. Bagnelle's No. 1 Trattner & Rhinehart, Sec. 2-13-26..Arranging set 6⅝-in. 945 ft.

LAFAYETTE COUNTY

George W. Harpe's No. 2 Bodcaw, 150 ft. S, 550 ft. E NW cor. SW NW Sec. 16-15-22 ....S.D. 1,205 ft.

LITTLE RIVER COUNTY

M. E. Sanderson's No. 1 Hale, Sec. 22-13-29 ....S.D. 1,851 ft.

LONOKE COUNTY

Joe D. Strahan's No. 1 Hardin, 300 ft. S and E, NW cor. NW NW Sec. 18-2s-7 ....S.D. 820 ft.

MILLER COUNTY

Black Diamond Oil Co.'s No. 1 Miller Land Co., Sec. 29-18-27 ....Drlg. 1,890 ft.

Duluth-Ark. Oil Co.'s No. 2 Beck, 330 ft. S and E, NW cor. SE SW Sec. 34-15-26 ....Recmtng. 6-in. 2,894 ft.

C. E. Murdock's No. 1 Rose, Sec. 4-16-26 ....Testing 2,941 ft.

C. E. Murdock's No. 1 Smith (formerly Baker & McMurray), 150 ft. N and W, SE cor. SE SW Sec. 33-15-26 ....Set 10-in. 193 ft.

Frank W. Roe's No. 1 Dominick, 330 ft. S and E, NW cor. NW NW Sec. 21-15-26 ....Drlg. 1,500 ft.

Texarkana Oil Corp.'s No. 2 E. L. Beck, 240 ft. N, 450 ft. E, SW cor. SW SE Sec. 33-15-26 ....Set 10-in. 180 ft.

Lee Timberlake's No. 1 B. F. Smith, 150 ft. N and W, SE cor. NE SW Sec. 33-15-26 ....Set 10-in. 140 ft.

OUACHITA COUNTY

J. E. Crosbie's No. 1 C. Primm, Sec. 23-15-16....Comp. pumping 70 bbls. 2,091 ft.

F. G. Harrell's No. 1 Poindexter, 330 ft. S and E NW cor. Sec. 35-15-18 ....Set 6⅝-in. 2,300 ft.; T.D. 2,390 ft.

L. L. McDonald's No. 1 J. A. Robertson, 200 ft. S and E, NW cor. NE NW Sec. 25-15-16....Drlg. 1,480 ft.; (O.W.D.D.).

POINSETT COUNTY

Ark. State O. & G. Co.'s No. 1 fee, C NE NE Sec. 13-11-3e ....S.D. 575 ft.

UNION COUNTY

D. S. Brock's No. 1 Murphy Land Co., 330 ft. S and E, NW cor. NW NE Sec. 34-19-18....Set 10-in. 150 ft.; drlg. 1,030 ft.

E. R. Henderson's No. 2 J. H. Ogden, 330 ft. S and E, NW cor. SW SE Sec. 32-18-14 ....W.O.S.R. 2,208 ft.

E. R. Henderson's No. 1 Vines, 330 ft. N and W, SE cor. SW SE Sec. 29-18-14 ....Set 10-in. 112 ft.

Marine Oil Co.'s No. 2 Union Sawmill Co., 330 ft. S and E, NW cor. SE SE Sec. 2-18-13 ....W.O.S.R. 3,562 ft.

Sam M. Richardson Oil Co., Inc.'s No. 1 Hammond, 330 ft. S and E, NW cor. SE NE Sec. 19-17-15..... Drlg. 1,608 ft.

Chas. Steele's No. 1 J. B. Combs, 150 ft. N, 135 ft. W, SE cor. SW NW Sec. 25-18-16 ....Rigging up.

WOODRUFF COUNTY

John Wadkins' No. 1 Rosser, Sec. 7-5n-2w ....S.D. 1,300 ft.

Mississippi

LAMAR COUNTY

Lamar Oil Co.'s No. 1 Scott, NE NE Sec. 18-2n-14.....S.D. 3,010 ft.

MADISON COUNTY

H. A. Wilson, tr.'s No. 1 Copex, 200 ft. N and E, SW cor. SW NE Sec. 24-9-3e ....S.D. 1,950 ft.

NEWTON COUNTY

Bod Dalton et al's No. 2 Majura, SE SE Sec. 25-6-11.....Drlg. 3,020 ft.

RANKIN COUNTY

Hill Bros. and Cleve Love's No. 1 Lancaster, C SW NW Sec. 27-5-5e ....Set 12½-in. 42 ft.

SIMPSON COUNTY

Beavy Corp.'s No. 1 R. J. Beavy, C SW Sec. 33-2n-4e...Drlg. 1,695 ft.

TALLAHATCHIE COUNTY

R. E. Collins et al's No. 1 Bunton, SE NE Sec. 25-26n-3e. Drlg. 1,935 ft.

WALTHALL COUNTY

Mutual O. & G. Co.'s No. 1 Boyd, Sec. 24-2n-9e, SW cor. SW SE ....Moving in rig.

WARREN COUNTY

Orbet Drlg. Co.'s No. 1 R. L. Parker, 300 ft. E, CWL, Sec. 14-14-1e ....Drlg. 2,050 ft.

Louisiana-Arkansas Proven Areas

North Louisiana

BOSSIER PARISH

Company, well, farm name, section and block—	Remarks:
United Gas Public Service Co.'s No. 1 Skannell unit, 1,317 ft. N, 1,274 ft. E, SW cor. Sec. 12-17-12	Testing 3,225 ft.

CADDO PARISH—BLANCHARD

Louana O. & G. Co.'s No. 2 Hammock, C SW SE Sec. 32-19-16 ....Drlg. 2,400 ft.

CADDO—RODESSA

R. W. Norton's No. 1-B J. B. French, 660 ft. S and E, NW cor., Sec. 34-23-16 ....Drlg. 4,030 ft.

CADDO—PINE ISLAND

Ark.-La.-Tex. O. & G. Co.'s No. 1 Simon, 330 ft. N and E, SW cor. NW Sec. 15-20-15 ....S.D. 41 ft.

CADDO—HOSSTON

C. D. Whittaker et al's No. 2 Barker, 1,150 ft. N, 1,900 ft. E, SW cor. Sec. 21-22-15 ....S.D. for csg. 1,050 ft.

DE SOTO PARISH

Tom McKinney et al's No. 1 J. M. Nabors, 330 ft. N and E, SW cor. SE SE Sec. 26-12-12 ....Rig up.

MOREHOUSE PARISH

United Carbon Co.'s No. 1 Montgomery, 1,339 ft. S, 2,268 ft. E of C Sec. 9-21-51 ....Set 6-in. 2,294 ft.

OUACHITA PARISH

Hatcher & Evans' No. 9 Hatcher, 1,390 ft. S, 1,950 ft. E, NW cor. Sec. 17-19-4e ....Set. 6-in. 2,147 ft.

Maury Drlg. Co.'s No. 6 McEwen, 3,300 ft. E, 10 ft. S, NW cor. SW Sec. 29-19-4e ....Set 12-in. 175 ft.; set 8-in. 832 ft.

SABINE PARISH—ZWOLLE

Baird Bros.' No. 1 Cooper, 330 ft. S and W, NE cor. SE Sec. 30-8-11 ....Set 10-in. 40 ft.

J. C. Chandler's No. 1 Rains, SW cor. NW Sec. 14-7-11..Running tubing 2,508 ft.

Dyer et al's No. 1 McCollister, 330 ft. S and E, NW cor. SW NE Sec. 24-7-12 ....Moving in rig.

Warren G. Gray's No. 1 Nulton, 2,970 ft. W, 330 ft. S, NE cor. Sec. 2-7-13 ....Drlg. 1,900 ft.

Magnolia Pet. Co.'s No. 1 Semon Lilly, NE cor. SE NW Sec. 8-7-11 ....Drlg. 3,467 ft.

Magnolia Pet. Co.'s No. 2 Gindratt, 330 ft. N, 330 ft. E, SW cor. SE Sec. 30-8-11 ....T.A. 2,485 ft.

Pelican Nat. Gas Co.'s No. 26 La. Long Leaf, SW NW Sec. 29-8-11 ....Treating with acid 2,631 ft.

Pelican Nat. Gas Co.'s No. 24 La. Long Leaf Lbr. Co., 330 ft. N and E, SW cor. Sec. 5-7-11 ....Bailed dry; W.O. 2,750 ft.

Pelican Nat. Gas Co.'s No. 27 La. Long Leaf Lbr. Co., 618 ft. N, 330 ft. W, SE cor. SW SW Sec. 29-8-11...Rigging up.

Pelican Nat. Gas Co.'s No. 11 Sabine Lbr Co., 330 ft. S and W, NE cor. SW NE Sec. 7-7-11 ....Set 10-in. 64 ft.; drlg. 238 ft.

Pugh-Hickman's No. 8 Stille, 330 ft. S and E, NW cor. Sec. 16-7-11 ....Set 10-in. 40 ft.

Rig Oil Co.'s No. 1 Walden, 330 ft. N and E, SW cor. NW NE Sec. 28-8-11 ....Derrick.

C. T. Ruffin's No. 1 Sabine Lbr. Co., 330 ft. N, 80 ft. W, SE cor. NE NE Sec. 7-7-11 ....Treating with acid 2,443 ft.

C. T. Ruffin's No. 1 McNeely, 510 ft. S, 330 ft. W, NE cor. NE NE Sec. 7-7-11 ....Testing 2,550 ft.

Service Drlg. & Royalty Co.'s No. 1-B Smith, 990 ft. S and W, C Sec. 7-7-10 ....Testing 2,672 ft.

L. J. Tillery's No. 1 Sabine Lbr. Co., 800 ft. S, 220 ft. W, NE cor. Lot 3, La. Nava grant, Sec. 5-7-11 ....Testing 2,475 ft.

Mississippi

HINDS COUNTY

B. B. Jones' No. 1 McRae, 580 ft. W, 540 ft. N, SE cor. SW NW Sec. 24-7n-1w ....Drlg. 3,230 ft.

B. B. Jones' No. 1 Stone, 500 ft. S, 100 ft. E, NW cor. Sec. 18-5n-3e ....Set 12½-in. 330 ft.

Love & Lancaster's No. 2 Elton plantation, NE Sec. 9-4-1e ....S.D. 5 ft.

Meredith Trading Co.'s No. 1 Nelson et al, 330 ft. E, 330 ft. S, NW cor. SW SE Sec. 24-6-1e ....Drlg. plug 2,507 ft.

Muse & Weaver's No. 1 Sellers, 660 ft. N, 330 ft. W, SE cor. SW NE Sec. 26-6n-1e ....Reaming 2,462 ft.

RANKIN COUNTY

Ferguson, Fuller & Metz' No. 1 Ammons, 350 ft. E and S, NW cor. NW NW Sec. 35-3n-3e ....Rigged up.

Cleve Love et al's No. 1 Thomas, SW Sec. 10-4-1e .....Drlg. 4,340 ft.

East Texas (Border Counties)

MARION COUNTY

Perry et al's No. 1 E. B. Colgin, 300 ft. N and E, SW cor. Martin Noll Sur. ....S.D. 1,400 ft.

PANOLA COUNTY

W. H. Nichols et al's No. 1 S. W. Ray, 330 ft. S of N line, 330 ft. W of E line, W. P. Culver Sur. ....Fishing 1,850 ft.

M. H. Robbins et al's No. 1 Alsee Williams, 165 ft. N and E, SW cor. 30-ac. tract in Winnie Mann Sur. ...Coring 2,103 ft.

C. R. Obermeyer et al's No. 1 T. J. Wooten, P. Martin Sur. ....S.D. 2,110 ft.

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THE OIL AND GAS JOURNAL
Tulsa, Oklahoma

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FOR SALE—2,500 ft. 10", 32-lb. casing; 12,000 ft. 8¼", 24-lb.; 20,000 ft. 6⅝", 17-lb.; 7,000 ft. 6¼", 13-lb.; 5,000 ft. 5¼", 13-lb.; 25,000 ft. 2", 4-lb. tubing and ⅝" rods. All A-1. Located Centralia, Ill. Frank Randall, 108 E. 23 St., Owensboro, Ky.

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60 HP DeLaVergne Oil Engine direct connected to 3½"x12" National Transit High pressure oil pump. 40 HP DeLa Vergne Oil Engine belted to 5"x12" Gasco pump. Located Florence, Kans. Guaranteed in A-1 condition and as good as new.
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70,000-ft. 4-in., 5.50 lb. Plain End Line Pipe beveled ready for welding. Excellent pipe in first class condition. In stock in Oklahoma—may be delivered anywhere.
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Wichita, Kansas.

25 K.W. and 40 K.W. Gas Engines, 220 volts, D.C. Two 100 K.W. Gas Engine Generator Sets, 220 volts, D.C. 7x6 Ingersoll-Rand ER-1 Air Compressor. Six-inch Oster Pipe Threading Machine. Also, large stock of lathes, pipe machines, milling machines, etc. Send for our list.
Terms to suit.
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26 West 2nd St. Cincinnati, Ohio.

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AIR-GAS LIFT EQUIPMENT

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